

Evaluation of Physical Activity Programs Taking Place at The Pike Market Senior Center

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Abstract

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Background: Physical activity provides many benefits for older adults, including the prevention and control of heart disease, prevention of obesity, management of diabetes, increased independence, increased socialization and decreased levels of depression. Through the physical activity classes SAIL and yoga, the Pike Market Senior Center offers their members the opportunity to participate in physical activity multiple times per week.

Purpose: The purpose of this study was to conduct a program evaluation of the SAIL and yoga classes offered by the Senior Center with the goal of using these findings to assist the Senior Center to improve their physical activity programs. The Senior Center was interested in

understanding ways in which the physical activity programs are meeting the program's' objectives.

Methods: A one-group posttest-only design utilizing direct observations and semi structured interviews was used to conduct this study. A total of 20 observations were done between the dates of June 10, 2015 and December 14, 2015 and 15 semi structured interviews took place between December 14, 2015 and February 4, 2016.

Analysis: Direct observation notes and semi structured interview transcripts were analyzed using Atlas.ti software and the process of content analysis. The main question this study sought to answer is, are the SAIL and yoga classes having the intended effect on those who participant in the classes?

Findings: The physical activity programs improved physical function, minimized the risk of disease, and provided opportunities to be more engaged in life yet some areas for improvement were also identified.

Conclusion: The Senior Center physical activity programs have been effective in meeting most of the programs objectives yet there are areas that can be strengthened. Further research is needed to understand the barriers faced by the Senior Center members who do not participate in the physical activity program.

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I would like to thank all those who made this study possible. The hard work and dedication of my committee chair, Noel Chrisman, was invaluable to my work. Noel's wisdom, guidance and commitment to the success of this study not only made this study attainable but he made it a joy to work on. I would like to thank June Strickland, my second committee member, for her feedback and assistance with this study. Thanks also to Zoe Freeman, the Wellness-Engagement Coordinator of the Pike Market Senior Center who brought hands on experience, kindness and encouragement every step of the way. I would also like to thank Rhonda Allison, the SAIL and yoga class instructor, for go generously allowing me to observe her classes, for sharing her experiences and her data with me. I have learned life long lessons from all of you. I would also like to thank my transcriber, Debbie Nanry, for the hours of transcription she provided. Thanks to my family, especially my kind and loving husband Ryan, for standing by me and supporting me every step of the way.

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Evaluation of Physical Activity Programs

Chapter One- Introduction

Physical activity (PA) and exercise provide many benefits for older adults, including the prevention and control of heart disease, prevention of obesity, management of diabetes, increased independence, increased socialization and decreased levels of depression (Center for Disease Control (CDC), 2009). Despite the known importance of physical activity and exercise for healthy aging, older adults continue to be the least active age group in the United States (Bethancourt, Rosenberg, Beatty, & Arterburn, 2014) and only 75% of adults in America are meeting the Department of Health and Human Services Guidelines for PA (US. Department of Health and Human Services, 2008). Numerous opportunities for older adults to participate in PA have been designed and implemented in order to increase PA among older adults (Pate & Buchner, 2014). PA programs available to older adults include gym membership discounts like *SilverSneakers* (SilverSneakers, 2014), walking groups like Seattle Parks and Recreation *Sounds Steps* (Lifelong Recreation Sound Steps Walking Program, 2016) and fitness classes taught at community Senior Centers (National Institute of Senior Centers, n.d.; Pate & Buchner, 2014).

Senior Centers, like the Pike Market Senior Center (PMSC), are a beacon to aging communities and a valuable resource for creating and implementing PA and exercise programs for the communities which they serve (National Institute of Senior Centers, n.d.). PMSC targets low SES older adults in the Downtown Neighborhood District of Seattle Washington.

Currently, there are two exercise programs offered at PMSC, Stay Active and Independent for Life (SAIL) and yoga. The purpose of this study was to conduct a program impact evaluation of the SAIL and yoga classes offered by the PMSC with the goal of using these findings to assist the PMSC to improve their PA programs. The main question this study sought to answer is, are the SAIL and yoga classes having the intended effect for on the participants? An impact evaluation is conducted by an organization to determine if a program has generated the intended effects by meeting the objectives set by the organization for the program or intervention (Grembowski, 2001). The findings from this study are expected to contribute to the wellness and healthy aging of PMSC members who participate in the SAIL and yoga class by offering recommendations for improvement and by highlighting activities that are currently effective in meeting the intended impact.

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Community health nursing is defined by the American Nurses Association (ANA) as “a synthesis of nursing practice and public health practice applied to promoting and preserving the health of populations (ANA, 1980, p. 2).” Community health nursing sets out to promote or protect a specific community or population through community assessment, program planning, program implementation and program evaluations (Ervin, 2002, p. 13). Program evaluations, like this one, are one of the four major components to community health nursing, community assessment, program planning, program implementation, and program evaluation (Ervin, 2002). Along with providing the PMSC with valuable information about the PA programs, findings from this study are also expected to be beneficial to the sciences of community health nursing and public health by emphasizing the importance and benefit of conducting program evaluations in community health settings.

The **planning committee** of this study consisted of the Wellness-Engagement Coordinator of the PMSC, the primary investigator (PI) a University of Washington Master in Nursing/Master in Public Health scholar, and the committee chair of this study. The study design used for this impact evaluation was a one-group posttest-only design (Grembowski, 2001; Issel, 2009) and the methods used were direct observation and semi structured interviews.

This thesis is divided into the following chapters, (1) Introduction, (2) Literature Review, (3) Methods, (4) Findings, (5) Discussion, and finally an Appendices. The remainder of this introduction chapter includes the problem statement and the study aims and research questions.

Problem Statement

PA and exercise programs are particularly important for older adults with low socioeconomic status (SES) because this population experiences worse health than middle or high SES populations as well as experiencing more barriers to PA and exercise than their middle or high SES peers (Plow, Allen, & Resnik, 2011; Prohaska, Belansky, Belza, Buchner, Marshall, & McTigue, 2006; Trost, Owen, Bauman, Sallis, & Brown, 2002). Research is limited concerning PA and exercise among low SES older adults as most of the research has focused on the general older adult population (Plow, et al., 2011; Prohaska et al. 2006; Yancey, Ory, & Davis, 2006). PA and exercise interventions targeting older adults, and specifically older low SES adults, are critical in the prevention and management of chronic disease (The State of Aging and Health in America 2013, 2013).

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Those who will most benefit from this study are the PMSC members who participate in the PA programs. Also, findings are expected to be of benefit to the SAIL and yoga class instructor as well as the Wellness-Engagement coordinator of the PMSC. Not only will this study be of benefit to the PMSC but this work contributes to the advancement of community health nursing and public health by highlighting the benefits of PA for low SES older adults. By doing so this information may also assist other senior centers in designing, implementing and evaluating physical activity and exercise programs targeted toward similar communities

A number of gaps in research exist concerning PA and exercise for low SES older adults. Fewer programs for low SES older adults are available than for the general older adult population and as a result, evaluations for PA and exercise programs for low SES older adults are even fewer (Yancey et al., 2006; Moore, Roux, Everson, McGinn, & Brines, 2008). Health benefits of PA and exercise programs have been evaluated for the general population but not as extensively for low SES older adults (Carter-Pokras & Baquet, 2002; Hatch, 2005; Cummings & Jackson, 2008; Kim & Richardson, 2011). The evaluation of PA and exercise programs for low SES older adults are of particular importance because this population experiences far more health disparities and faces greater barriers to PA and exercise classes than middle and high SES older adults (Kim & Richardson, 2011; Plow, Allen, & Resnik, 2011; Prohaska, Belansky, Belza, Buchner, Marshall, & McTigue, 2006; Trost, Owen, Bauman, Sallis, & Brown, 2002).

Study Aims and Research Questions

The purpose of this study was to conduct a program impact evaluation of the SAIL and yoga classes offered by the PMSC with the goal of using these findings to assist the PMSC to improve their PA programs. The main question this study sought to answer is, are the SAIL and yoga classes having the intended effect on those who participant in the classes? The overall intended effect for the PA programs offered at the PMSC is to contribute to the overall wellness and healthy aging of the PMSC members. By providing the participants with a means for meeting the The U.S. Department of Health and Human Services (USDHHS) recommendations for PA for older adults (USDHHS, 2008), implementing a SAIL class consistent with guidelines found in the Program Leader Manual (Program Leader Manual, 2015), and to providing classes in alignment with the objectives for the Wellness-Engagement programs (see Appendix A for the Wellness/Engagement Strategy Grid) the PMSC has set out to provide PMSC members with

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tools to increase their potential for successful aging. Based on this intended effect and the means in which the PMSC has sought out to meet it, the following research questions were developed and used for this study:

1. How do the SAIL and yoga classes meet the USDHHS recommendations for PA?
2. Is the SAIL class designed to adhere to fidelity guidelines found in the instructor handbook?
3. Are the PA classes meeting the PMSC's objectives for the program?

Chapter Two- Literature review

A thorough literature review took place prior to the development of this evaluation in order to gain an in-depth understanding of the importance of physical activity programs, to build knowledge on the program evaluation process, and to understand the importance of programs provided to low SES older adults. In this chapter literature is presented on the following topics, the PMSC, Program Impact Evaluation, Health of Older Adults and Low SES Older Adults, Physical Activity for Older Adults and Low SES Older Adults, Delivery Methods of Physical Activity and Exercise Programs, and The Successful Aging Model.

Pike Market Senior Center

The PMSC, located in the Downtown Neighborhood District of Seattle, offers nutritious meals, social and fitness activities, employment and financial counseling, and social services for people age 55 and older. All services offered at PMSC are provided free of charge and are designed to promote healthy aging and stability for older adults. In partnership with the Pike Market Food Bank, the mission of PMSC is to make each day better, safer, healthier and to promote independence for older adults. PMSC is open every day of the week: Monday – Friday from 8am to 4pm and on weekends from 8am to 1pm (Pike Market Senior Center, 2014). Pike Market Senior Center meets all nine of the National Institute of Senior Centers (NISC) standards and strives to be a beacon for the senior community in Seattle.

The **member demographics** In 2014 PMSC served a total of 1525 members. Of these 1525 members, 745 (49%) reported being homeless, 682 reported not being homeless (45%) and 98 did not report their housing status (6%). 970 members reported living alone (64%), whereas 387 (25%) reported living with others. The majority of the members reported very low income based on HUD guidelines. 1220 (80%) reported very low income, 103 (7%) reported low income,

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25 (2%) reported moderate income and 13 (1%) reported above moderate income. 164 (11%) members did not report their income level. 528 of the members reported being between the ages of 55 to 59 (35%), 831 reported being between the ages of 60 and 74 (54%), 121 reported being between the ages of 75 and 84 (8%) and 31 reported being over 85 years of age (2%). 14 did not report their age. (Client Profile Report, 2014). 336 (22%) of the members identified as female, 1163 (76%) identified as male and one member identified as transgender/other. 25 members did not report their gender. 743 (49%) members reported living with a disability. 548 (36%) members identified as White, 392 (26%) identified as Black, African-American or other African, 241(16%) identified as Hispanic or Latino, 143 (9%) identified as Asian or Asian American, 67 (4%) identified as American Indian or Alaska Native, 3 (<1%) identified as Hawaiian Native or Pacific Islander, 44 (3%) identified as multiracial and 44 (3%) did not report Race/Ethnicity. 83 (5%) of PMSC members reported being a refugee and 310 reported limited English speaking skills. 288 (19%) members reported being a Veteran. In summary, PMSC provides resources to a community of a racially/ethnically diverse older adults, the majority of whom have very low income, about half are homeless, three in four identify as male, and more than half live alone (Pike Market Senior Center Annual Data, 2015).

The **programs and classes offered at PMSC** are nutrition programs, the pet food bank, social services, and wellness-engagement. Everyday there are at least three classes and activities offered at PMSC along with two daily meals. The goal of these classes and activities is to provide a social environment for members to spend time together, increase independence, and improve health (Pike Market Senior Center, 2014) (See Appendix A). Current activity listings are available in print and online through the monthly newsletter of the PMSC and food bank entitled Parsley, Sage and Time (Pike Market Senior Center, 2014).

PMSC wellness-engagement program offers fitness, art classes, acupuncture, foot care clinic, and trips off site to promote health and social engagement (Pike Market Senior Center, 2014). The physical activity programs currently being offered at PMSC are SAIL and Yoga. Both classes are offered in the mornings, three times per week, on Mondays Wednesdays and Fridays. Weekly events include acupuncture on Monday afternoons, journaling and Threads Plus, a sewing group, on Tuesdays, AA meetings and Wellness Break on Wednesdays, music

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and Walk with Sound Steps on Thursdays, and craft and movie afternoon on Friday. Other events offered monthly or bimonthly are Bingo, Betty's Dance, and the Foot Care Clinic.

The **five identified objectives developed by PMSC** for the SAIL and yoga classes are found in Table 1 along with the ways in which the PMSC hopes participants will achieve these objectives (See Appendix A for more details).

Table 1 <i>PMSC Objectives for the PA programs</i>	
Physical benefit	Fall prevention through strength and balance training Deep muscle stretching Improve breathing
Social benefit	Exercise in a social setting Interact with one another Development of social relationships between members
Intellectual benefit	Build listening skills Strengthen cognitive function
Cultural development	Cultural beliefs about physical activity can be shared among members
Spiritual development	Reduce stress Increase feelings of wellbeing Increase body awareness

Stay Active and Independent for Life

SAIL is a strength, balance and fitness program designed for older adults by the Washington State Department of Health. If done regularly, the SAIL program can help older adults increase their strength, balance, and fitness resulting in improved health and decreased risk of falls (York, 2006). The SAIL program was developed following the Washington State Department of Health Senior Falls Prevention Study which sought out to investigate the effectiveness of fall prevention interventions (Shumway-Cook, Silver, Lemier, York, Cummings, & Koepsell, 2007). 453 adults 65 years of age and older from the State of Washington participated in the study and it was found that the participants had improved balance, mobility skills, leg strength and a reduction in their fear of falling (Shumway-Cook, et al., 2007). As a result of this study the SAIL program has been created. SAIL classes are conducted by fitness, exercise science and healthcare professionals who have completed SAIL program leader training.

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Currently, PMSC is one of four SAIL classes offered in King County and one of seventy two classes statewide (Older Adult Falls, n.d.).

The SAIL program has been recognized as a Title III D evidence-based program by the Administration on Aging, meaning SAIL meets the highest level criterion for an evidence-based program. The Center for Healthy Aging at the National Council on Aging also recognize SAIL as an approved physical activity program. One translational research evaluation has been conducted on the SAIL program in order to evaluate the program dissemination, implementation and impact prior to launching SAIL statewide. It was found that participation in two or more classes per week for two or more months was associated with maintenance of strength and balance in healthy adults and improvements in strength and balance in more frail adults. Participants also reported a reduction in the difficulty of performing activities of daily life (York et al., 2011).

The overall **four goals** for the SAIL class, as outlined in the SAIL Program Leader Manual, are to stay active, to stay independent, to improve strength and balance, and to reduce fall-related risks (Program Leader Manual, 2011) There are six mandatory elements which need to be included for each SAIL classes. These activities are 3-5 minutes of warm up, 18-20 minutes of aerobics, 15-18 minutes of strength exercises, 10 minutes of balance and cool down, and 8-10 minutes of stretching, and finally one educational topic. The list of mandatory exercises for each of these six elements can be found in Appendix I (Program Leader Manual, 2011).

Yoga

Yoga has become increasingly common in the United States. Main elements of yoga include meditation, physical postures, and breathing exercises designed to promote mental, physical, and spiritual well-being (Herrick & Ainsworth, 2000). Practicing Yoga may aid in the prevention and management of multiple chronic conditions experienced by older adults including depression, stress, anxiety, menopausal symptoms, arthritis, low back pain, cancer, cardiovascular disease, and type 2 diabetes (Alexander, Innes, Selfe, & Brown, 2013). In a systematic review and meta-analysis authors Patel, Newstead, and Ferrer, reviewed the effectiveness of Yoga compared to other exercise interventions for older adults on health and physical function. 18 studies were included in this analysis and the synthesis of these studies suggests that the benefits of Yoga may exceed those of other more conventional exercise interventions (Patel, Newstead, & Ferrer, 2012). A study conducted in China in 2014 by Siu, Yu,

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Benzie, and Woo found, that when compared to a control group, older adults who had participated in a one year Yoga class had a reduced risk of metabolic syndrome. In this article metabolic syndrome was defined as a clustering of cardiovascular risk factors, including high blood pressure, central obesity, insulin resistance and dyslipidemia (Siu, Yu, Benzie, & Woo, 2015).

Along with health improvements, Yoga has been found to improve memory, and mental well being among older adults. One study found that by combining Yoga and memory training those who participated in both experienced added benefit when compared to those who only experienced the memory training (Mcdougall, Vance, Wayde, Ford, & Ross, 2015). Unlike the SAIL class yoga programs vary greatly and as a result no one evaluation tool or fidelity guidelines has been developed (Serman, 2012).

Program Impact Evaluation

An impact evaluation is conducted by an organization to determine if a program has generated the intended effects by meeting the objectives set by the organization for the program or intervention (Grembowski, 2001). Not all authors use terminology in the same way but the overall goals of impact evaluations are the same. For instance, Grembowski (2001) states impact evaluations can also be referred to as “outcome” or “summative” evaluations (p. 53) and Smith (2010) defines outcome evaluations as, “experimental types of design aimed to establish cause and effect relationships between the program and its outcome and are often referred to as impact assessments (p. 30).” Other researchers categorize outcome evaluation as focusing on more immediate effects of a program and impact evaluations as focusing on more long term effects of the program (Issel, 2009; Harris, 2010).

An Impact evaluation promotes accountability for allocated resources, fills in gaps in understanding programs components that are effective and ones that need improvement or modification, and identifies how measured changes are attributed to the project (Khandker, Koolwal, & Samad, 2010). A program impact evaluation allows the organization to reflect on their work and make adjustments in order to become more effective in the future, while continuing to build trusting relationships with community partners (Issel, 2009). The Evaluation Working Group of the CDC identifies program evaluation as an essential organizational practice in public health (Program Performance and Evaluation Office, 2015).

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The steps to conducting a successful program evaluation are outlined by Grembowski as a three part act. The first act in program evaluation is the development of the research questions and includes identifying the program theory and program objectives (Grembowski, 2001). The second act of program evaluation is answering the research question and includes the development of an evaluation design, the development of methods to carry out the design and conducting the evaluation (Grembowski, 2001). The third act of Grembowski's framework is translating the answers from act two to action. This includes dissemination of finding and implementation of policy changes (Grembowski, 2001).

The CDC recommended framework for program evaluation includes the same concepts as the Grembowski framework however; the CDC framework is broken into six steps and is visualized as a cyclical process rather than a linear one (Framework for Program Evaluation in Public Health, 1999). The steps outlined in this framework are engage stakeholders, describe the program, focus the evaluation design, gather credible evidence, justify conclusions, and finally ensure use and share lessons learned. The underlying principles in which the CDC bases these steps are utility, feasibility propriety and accuracy. Utility refers to the ability of the evaluation information to be used by all stakeholders. Feasibility refers to the ability to conduct an evaluation in a realistic manner. Proprietary refers to the evaluator conducting their work in an ethical and legal manner. Finally, accuracy refers to the degree in which an evaluation gathers and conveys accurate information (Framework for Program Evaluation in Public Health, 1999; Bryant, Altpeter, & Whitelaw, 2006).

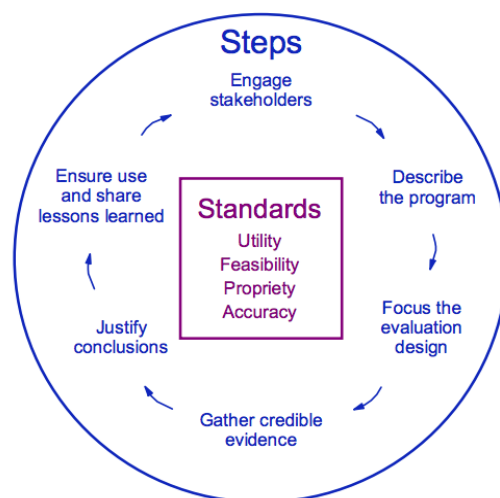


Figure 1. Recommended Framework for Program Evaluation (Centers for Disease Control and Prevention, 1999).

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An example of an impact evaluation conducted on an exercise program for low SES older adults is the evaluation of the Seniors Active Living in Vulnerable Elders (ALIVE) program, a 10-month health promotion program for low SES older adults. The ALIVE Program included exercise classes, health information sessions, and newsletters. The evaluation examined program participation, program impacts, and ways in which the program worked. The evaluation consisted of phone interviews with those who had completed the program and three focus groups with those who had withdrawn from the program, staff members, and family members of participants. It was found that the most frequent reason for joining the program was recognizing the benefits of exercise, and the most frequent reason for not attending the program was having other priorities. Participants reported the greatest effect was physically feeling better, improvements in mental health, and improvements in socializing. The nursing implications from this program and the program evaluation, as reported by the authors, are to motivate and encourage seniors to attend programs so that they could experience the benefits and to seek opportunities for multidisciplinary collaboration because collaboration has the potential to be beneficial for nurses, their colleagues, and seniors (Buijs, Ross-Kerr, Cousins, & Wilson, 2003).

One Canadian study sought to evaluate the effects of Tai Chi on health related fitness among low SES older adults. This study found that after a 16 week Tai Chi program available seven times per week significant improvements were found in participant's health related fitness. This study suggest that Tai Chi can be effective for improving health related fitness among low SES groups. This study's finding also found that non Tai Chi culturally related ethnic groups did not experience barriers to participation in this older low SES population sample (Manson, Ritvo, Arden, & Weir, 2013).

A study conducted among African Americans with disabilities residing in difficult social environments sought to evaluate the feasibility, efficacy, and safety of a 12-week exercise training program. Though this study did not specifically look at older adults the mean age of participants was 54.1 years. The research participants participated in an exercise training regimen 3 days per week for 60 minutes per day. Compared to the control group, the exercise group showed significant gains in peak volume oxygen, strength and improved body composition. These findings suggest that the structured exercise program had improved strength and cardiovascular

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fitness in low SES, sedentary adults with chronic conditions or risk factors for chronic conditions (Rimmer, Nicola, Riley, & Creviston, 2002).

The “Tai Chi in the Parks” program, a community health project that took place in the 1990s and early 2000s in the municipality of Miraflores in Lima Peru enacted a participatory evaluation of the program. The objectives of the Tai Chi program were to “Incorporate the practice of Tai Chi and its philosophy as a daily, voluntary and accessible habit in the life of Miraflores’ elderly population and achieve physical, psychological, social and spiritual development of Miraflores’ elderly population through the practice of Tai Chi (Potvin & McQueen, 2008). This evaluation sought to investigate the impact of the “Tai Chi in the Parks” program on promoting social integration of the elderly and the health of the elderly population. Two methods used in this evaluation were interviewing participants, their family members, and Tai Chi instructors, and observing the Tai Chi classes. The findings from the project demonstrated that Tai Chi could improve health, however, despite the class being free and held in public spaces, the majority of participants were women from high SES levels (Community Tool Kit, 2015; Potvin & McQueen, 2008).

The Southeast Seattle Senior Physical Activity Network (SESPAN) was a community-organizing approach to disseminating evidence-based interventions concerning physical activity. SESPAN was implemented in Southeast Seattle, an area with mostly low SES multicultural neighborhoods, extending 8 miles southeast of downtown Seattle. This project sought to make connections among community organizations to create new senior physical activity programs and to build coalitions of community groups in order to make large scale policy changes to increase senior physical activity. The published evaluation on this project focused on the sustainability of the community changes which took place, focusing on the community level impact. Evaluation of this project led to the creation of 16 ongoing exercise classes and walking groups, serving approximately 200 older adults in previously underserved Southeast Seattle communities (Cheadle, Egger, Logerfo, Schwartz, & Harris, 2009).

Health of Older Adults and the Benefits of Physical Activity Programs

As the baby boomer cohort enters older adulthood the number of Americans over the age of 65 will rise to 72 million (20% of the total population) by 2030 (The State of Aging and Health in America, 2013). The advancements in medicine over the past 100 years have contributed to the

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increase in the older population and has shifted causes for morbidity and mortality away from infectious diseases to age-related chronic diseases. Chronic diseases are now the most common cause of death in America. These age related chronic diseases include cardiovascular disease, cancer, stroke, diabetes, lower respiratory disease, and Alzheimer's (The State of Aging and Health in America 2013, 2013). Two thirds of older Americans have multiple chronic condition such as hypertension and diabetes and these chronic conditions are also sometimes paired with mental illness, addiction or cognitive impairments (The State of Aging and Health in America 2013, 2013). The risk of chronic disease increases with age, however through effective programs, like PA and exercise, older adults can manage chronic diseases more effectively and prevent or delay associated morbidities and premature death (The State of Aging and Health in America 2013, 2013).

Health of Older Low SES and Minorities in America

People with low SES in America experience higher levels of disease, have higher levels of mortality and morbidity, and have a higher risk for developing disabilities than their middle or high SES peers. Low SES older adults may be more socially isolated and experience more depression than middle or high SES older adults (Plow, et al., 2011; Prohaska, Belansky, Belza, Buchner, Marshall, & McTigue, 2006; Trost, Owen, Bauman, Sallis, & Brown, 2002). As the older adult population increases over the next few decades the racial and ethnic diversity of this population is also predicted to increase. In 2010 80% of adults over the age of 65 were non-Hispanic white but by 2030 that percentage will decrease to 71.2% and Hispanics will make up 12%, non-Hispanic blacks 10.3% and Asians 5.4%. Minority groups face disproportionately high levels of chronic disease, death, and disability compared with non-minorities (Office of Minority Health, 2014). Non-Hispanic blacks, Hispanics, and people with lower SES are also less physically active than whites and those with higher SES (Trends in leisure-time, 2005).

Effects of Low SES on Physical Activity and Health

Minority communities and people with low SES overall engage in less physical activity and experience poorer health outcomes than the general population. People with low SES are more likely to live a sedentary lifestyle (39.5%) compared to those with middle and high SES at (13.2%) (Behavioral Risk Factor Surveillance System, 2011). Americans with an income below \$15,000 per year are more likely to be diagnosed with chronic illnesses related to inactivity such

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as diabetes, asthma, obesity and heart disease than those who make more than \$50,000 per year. (Behavioral Risk Factor Surveillance System, 2011). These high levels of inactivity, resulting in an increase in chronic illnesses, have a significant influence on the rate of death and disability among low SES populations (Sanchez, Stolz, & Jacinta, 2004). It has also been found that the combination of poor health and poverty can accentuate psychosocial health problems that then can increase levels of inactivity (Tomaka, Thompson, & Palacios, 2006; Plow et al. 2011).

Cost of Inactivity to the Individual, Family, Community and Healthcare System

People living with one or more chronic disease often experience a diminished quality of life and an increase in disability. The inability to perform daily activities can restrict an individual's level of independence leading to isolation or dependence on others to perform their activities of daily living (The State of Aging and Health in America 2013, 2013). This is not only costly to the individual but can be costly to their families and communities. More than two thirds of all health care costs in the America are for treating chronic illnesses. For older adults 95% of health care costs are for chronic illnesses and the cost of providing care to a person 65 years of age or older is three to five times greater than the cost of someone under the age of 65 (Glass & Balfour, 2003). The two thirds of older adults who have multiple chronic conditions account for 66% of the total cost of healthcare services in America (Groessl, Kaplan, Rejeski, Katula, King, Frierson, Pahor, 2007). Many of these costs both to the individual, family, community and health care system can be avoided with the implementation of effective PA and exercise programs. In 2010, about 11 percent of people age 65 and over reported participating in leisure-time aerobic and muscle-strengthening activities that met the 2008 Federal physical activity guidelines (Federal Interagency Forum on Aging-Related Statistics, 2012).

Benefits of Physical Activity for Older Adults and Low SES Older Adults

The **benefits of PA and exercise for older adults** are well established in the literature. These benefits are lower total healthcare costs, a slower decline in function and independence, management or prevention of chronic diseases specifically heart disease and diabetes, decreased levels of depression, increased socialization, and decreased isolation and hopelessness (USDHHS, 2008; CDC, 2009; Global recommendations on Physical Activity for Health, 2010). PA for older adults is particularly important because this population is the least

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physically active of any other age group and they experience higher rates of chronic disease than younger populations (USDHHS, 2008). Physical activity has been found to assist in improving or preventing the development of chronic conditions. According to the CDC It is important to participate in regular PA because PA can control weight, reduce the risk of cardiovascular disease, reduce the risk of type 2 diabetes and metabolic syndrome, reduce the risk of cancer, strengthen bones and muscles, improve mental health and mood, improve the ability to do daily activities, prevent falls and increase the chance of living longer (Global Recommendations on Physical Activity for Health, 2010). Healthy People 2020 includes PA as a health topic to be addressed by the public health sector to improve the health of older adults as well as the general population (2020 Topics and Objectives, 2015).

A rich database of information concerning the health benefits of PA and exercise for older adults exists throughout the literature. A vast number of studies have found PA and exercise improve the physical health, mental health and well-being of older adults. One meta-analysis reviewed studies concerning the effects of exercise in older adults who experience mobility problems, physical disability and/or multi-morbidity. Eighteen studies were included in this review and it was found that, despite pre-existing conditions, exercise had a positive effect on mobility and physical functioning. This analysis also found that high-intensity exercise interventions seem to be somewhat more effective in improving physical functioning than low-intensity exercise interventions (De Vries, Van Ravensberg, Hobbelen, Rikkert, Staal, & Nijhuis-van Der Sanden, 2012).

Evidence suggests that the loss of strength and muscle mass appear to be an inevitable consequences of aging, however, one study suggests PA could aid in preventing or reversing this. In a randomized controlled trial consisting of eleven men and thirty one women it was found that regular PA prevented both age associated loss of muscle strength and increased muscle fat infiltration in older adults with moderate functional limitations (Goodpaster, Chomentowski, Ward, Rossi, Glynn, Delmonico & Newman, 2008).

Along with physical benefits, PA and exercise have been found to improve mental health, well-being and cognitive function. In a randomized controlled trial of 46 sedentary older adults age 60-75 researchers sought to examine the effects of a six month exercise program on depression, anxiety and quality of life scores. Compared to the control group a significant

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decrease in depression and anxiety scores and an increase in quality of life was found in those who participated in the exercise program (Antunes, Stella, Santos, Buono, & De Mello, 2005). PA and exercise have also been shown to reduce the risk of cognitive decline. One meta analysis reviewed twenty five randomized controlled trials in order to examine the impact of aerobic exercise, resistance training, and Tai Chi on the cognitive function of older adults without known cognitive impairment. Though some inconsistencies were found, results revealed significant improvements in cognitive function were found in those who participated in resistance training and Tai Chi (Kelly, Loughrey, Lawlor, Robertson, Walsh, & Brennan, 2014).

Barriers to Accessing Physical Activity Programs

The numerous **barriers** to PA and exercise faced by low SES populations confound the increased health risks faced by this population. The most common barriers to PA and exercise for low SES populations are a lack of access to facilities, and PA promoting facilities are less likely to be found in low SES and minority communities than higher income communities (Richter, Wilcox, Greaney, Henderson, & Ainsworth, 2002; Choitz, Johnson, Berhane, Lefever, Anderson, & Eiser, 2010). Additional barriers to PA and exercise experienced by low SES populations are chronic health conditions, older age, geographic location, time constraints, roles within the family, cost, and limited transportation options (Schrop, Pendleton, Mccord, Stockton, Mcnatt, & Gilchrist, 2006; Yancey, Mccarthy, Harrison, Wong, Siegel, & Leslie, 2006). PA and exercise interventions targeted at low SES populations have been found to be effective in increasing activity levels, leading to an improved health outcome among this population (Choitz et al. 2006). Choitz et al. discuss the successes of two fitness centers in underserved, urban settings where other convenient, affordable, and safe exercise options were not previously present. The goal of these interventions was to increase exercise levels of low SES community members as a means of improving the overall health status of the community. They found by building the fitness centers within the neighborhood many of the barriers to PA were eliminated for this community and the intervention was a success (Choitz et al, 2006).

Specific Needs of Low SES Older Adults

Low SES older adults share many of the same barriers as the larger low SES population but, because of their age, they experience increased levels of disease, disability and isolation. Along with physical health consequences one study found the combination of poor health and

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poverty can accentuate psychosocial health problems which then can increase levels of inactivity (Tomaka, et al., 2006). Despite the increased levels of risk among low income older adults, fewer studies have been conducted with these communities than the general populations (Carter-Pokras & Baquet, 2002; Hatch, 2005; Cummings & Jackson, 2008; Kim & Richardson, 2011).

One longitudinal study investigated the effect of SES inequalities and lack of private health insurance on individuals' growth trajectories in physical functioning, as measured by activities of daily living. Data from the Health and Retirement Study (1994-2006) were used for this study. 6519 adults provided in-depth information about health, SES, and health insurance status. Researchers found that higher levels of income and assets and having private health insurance significantly predicted better physical functioning. The authors suggest that anti-poverty and health insurance policies should be enhanced to reduce the negative impact of SES inequalities on physical functioning throughout an individual's life course (Kim & Richardson, 2011).

Another study sought to investigate the impact of SES over the life course on health disparities at older ages. Kahn and Fazio (2005) examined both cumulative and current financial resources and financial strains as determinants of physical conditions, functional impairment, and mental health. Data were collected from the 2001 Aging, Stress, and Health Study, which interviewed over 1,100 adults aged 65 years and older living in the Washington, D.C., metropolitan area. Findings demonstrated racial and socioeconomic disparities did not provide a simple explanation to health disparities faced by low SES populations. Researchers concluded those experiencing financial strain had poorer health (Kahn, Fazio, 2005).

Delivery Methods of Physical Activity and Exercise Programs

A multitude of PA and exercise programs have been designed and implemented for older adults throughout the United States (National Institute of Senior Centers, n.d.; Pate & Buchner, 2014). These programs vary from walking groups, yoga classes, strength training, and balance training. The American College of Sports Medicine and the American Heart Association (ACSM/AHA) recommend similar PA for older adults as they do for all adults with some important differences. The recommended intensity of aerobic activity needs to consider older adult's aerobic fitness level and make appropriate modifications; activities that improve or maintain flexibility are recommended; to prevent falls balance exercises are recommended (Nelson, Rejeski, Duncan, &

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Judge, 2007). The ACSM/AHA also suggests older adults have an activity plan in place for achieving recommended PA and PA programs emphasize moderate-intensity aerobic activity, muscle-strengthening activity, reducing sedentary behavior, and risk management (Nelson, et al. 2007)

Some Medicare supplemental plans offer access to a national program called SilverSneakers (SilverSneakers, 2014). Silversneakers is an insurance benefit providing free gym memberships and access to FLEX classes. FLEX classes are exercise classes specifically designed for older adults. Currently there are two locations in the Seattle area offering FLEX classes and ten gyms that Silver Sneaker eligible older adults can access. The current participating providers in Washington State are Amerigroup, Asuris Northwest Health, Group Health Cooperative, Health Alliance Medicare, Health Net Health Plan of Oregon, Humana, Premera Blue Cross, Regence BlueShield, Soundpath Health, UnitedHealthcare. Unfortunately, only one in five Seniors are eligible for these services (SilverSneakers, 2015). Despite the availability of this program for many seniors the vast majority of do not utilize these programs.

The USDHHS recommendations for PA

The U.S Department of Health and Human Services recommends older adults participate in PA in order to prevent disease and maintain health. These activities can be done at a moderate intensity level or vigorous activity level or in combination. Moderate intensity activity requires a medium level of effort and vigorous activity requires a large amount of effort. On a scale of 0 to 10, where sitting is 0 and the greatest effort possible is 10, moderate intensity activity is a 5 or 6, resulting in an increased respiration and heart rate. Vigorous intensity activity is a 7 or 8 on this scale and results in a large increases in respiration and heart rate. In the 2008 Physical Activity Guidelines for Americans, published by the USDHHS, the following PA guidelines are recommended for older adults:

- At least 150 minutes a week of moderate-intensity, or 75 minutes a week of vigorous-intensity aerobic physical activity, or an equivalent combination of the two.
- Aerobic activity should be performed in episodes of at least 10 minutes, and preferably, it should be spread throughout the week.
- Muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on 2 or more days a week.

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- Older adults should do exercises that maintain or improve balance if they are at risk of falling.

Table 2 <i>Examples of Aerobic and Muscle-Strengthening exercises</i>	
Aerobic	Muscle-Strengthening
<ul style="list-style-type: none"> • Walking • Dancing • Swimming • Water aerobics • Jogging • Aerobic exercise classes • Bicycle riding (stationary or on a path) • Some activities of gardening, such as raking and pushing a lawn mower • Tennis • Golf (without a cart) 	<ul style="list-style-type: none"> • Exercises using exercise bands, weight machines, hand-held weights • Callisthenic exercises (body weight provides resistance to movement) • Digging, lifting, and carrying as part of gardening • Carrying groceries • Some yoga exercises • Some Tai chi exercises
<p><i>Notes. Table from USDHHS 2008 Physical Activity Guidelines for American</i></p>	

Successful Aging Model

Throughout the development and execution of this evaluation, the Successful Aging Model served as an important framework. The Successful Aging Model was especially important in the development of interview questions and in the analysis of the Data. The Successful aging model was created as a result of the MacArthur Study, a collaboration of dozens of individual research projects designed to provide fresh insight into what is required for individuals to continue to function effectively (Rowe & Kahn, 1998). This project focused on the positive aspects of aging, looking past the chronological age and exploring genetic, biological, behavioral, and social factors which influence how people age. This collaboration resulted in the development of the Successful Aging Model. The definition of successful aging as stated by Rowe and Kahn is “the ability to maintain three key behaviors or characteristics. These characteristics are (1) Avoiding disease and disease related disability, (2) high mental and physical function, and (3) active engagement in life (Rowe & Kahn, 1998, p. 38)”. The Successful Aging Model demonstrates that for someone to flourish in older age they must not merely be absent of disease. A person can easily be free from illness but by living an isolated or inactive life still have the potential to lead to decline.

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The three components of the Successful aging model all contribute to a thriving older age but there is a hierarchical ordering among them. The absence of disease and disability makes it easier to maintain mental and physical function and maintenance of mental and physical function in turn leads to the ability to be more actively engaged in life (Rowe & Kahn, 1998).

Avoiding disease and disability not only refers to the absence of disease itself but also the absence of risk factors that contribute to disease and disability. Disease and disability can sometimes be unavoidable, such as genetic disorders or accidents; however, many illnesses and disabilities can be avoided or lessened through lifestyle choices (Rowe & Kahn, 1998). Older adults can participate in activities such as disease screening for early cancer detection, exercise and PA, healthy eating, receive vaccinations, abstain from smoking, and wear sunscreen to prevent or lessen the onset of disease and disability. Participating in these types of activities also provides the individual with the potential to recover lost function.

High mental and physical function are independent of one another, one can have high mental function but low physical function and vs. versa, but both contribute to the ability to maintain a high level of overall functioning. High mental and physical function is indicative of what a person is capable of doing but not necessarily how the person will engage in their life.

Physical function refers to a “person’s ability to do basic physical actions such as walking, bending, walking up steps, and reaching (Jones & Rose, 2005, p. 132).” Prior to the MacArthur studies physical function was assessed by looking at a person’s ability to eat, dress, bathe, shop, and do household chores independently. The MacArthur study sought out to look at a more comprehensive range of activities to measure physical function to identify factors that promote or sustain physical function for older adults. Physical fitness was seen as just one of many important factors that contribute to the physical function of older adults; social relationships and mental function were found to have a positive effect on physical function. Physical function was measured by testing the study participants. To maintain or increase physical function the Successful Aging Model suggests following programs of progressive training.

Mental function is the ability to understand, process, retain and communicate information. One major concern found among older adults is a fear of declining mental function which may occur in older age (Rowe & Hahn, 1998). Two brain functions do decline with age, the speed in which information is processed and explicit memory (Rowe & Hahn, 1998). Despite this

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inevitable decline, much can be done to minimize or avert cognitive loss. The MacArthur Study found that those with higher education, more physically active, good lung function, and higher self esteem were more likely to maintain mental function. These findings lead to the recommendations that by participating in memory training, being physically active, and having social support can help in the maintenance of mental functioning (Rowe & Kahn, 1998).

Engagement with life refers to maintaining close relationships with friends and family, and remaining involved in meaningful activities. The Successful aging Model emphasizes the importance of maintaining engaged with life as an important contribution to thriving in older age. Relating to others and continuing productive activity are the two ways in which the Successful Aging Model stresses older adults can stay engaged in their lives (Rowe & Hahn, 1998).

Relating to others involves both being needed by friends and family but also needing friends and family. Being part of a social network is one of the most dependable predictors of longevity. Supportive social behavior takes on two forms, (1) socio-emotional, expressions of affection, respect and esteem, and (2) instrumental, involving direct assistance like chores or transportation.

Continuing productive activity includes paid and unpaid activity that creates goods or services. Mental and physical function are essential to being able to be productive. Productivity is valuable to older adults whether it is paid work or not. Continuing to be productive contributes to the successful aging of older adults by providing individuals with a beneficial activity, raising their self esteem, and providing a means to be physically or mentally active (Rowe & Hahn, 1998).

Crowther, Parker, Achendaum, Larimore, & Koenig revisited Rowe and Kahn's model and found the addition of positive spirituality to be a critical part to healthy aging along with the other three components (Crowther et al. 2002). Crowther et al. use the definition of spirituality as "the personal quest for understanding answers to ultimate questions about life, about meaning, and about relationship to the sacred or transcendent, which may (or may not) lead to or arise from the development of religious rituals and the formation of community (Koenig et al., 2000, p. 18)" Therefore, for this study, maximizing positive spirituality has been included as part of the the Successful Aging model.

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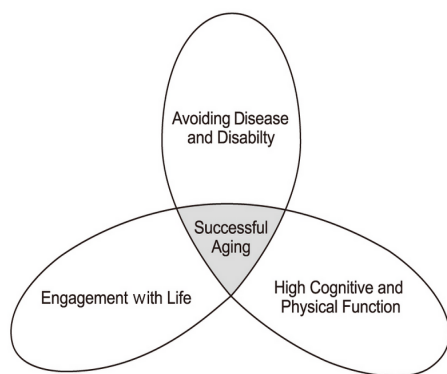


Figure 2: Image from Rowe & Kahn 1998 p. 43

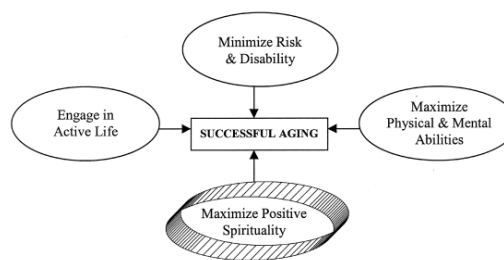


Figure 3: Image from Revised Rowe & Kahn Model of Successful Aging from Crowther et al. 2002 p. 3

Conceptual Framework

Older adults experience substantial health benefits from regular PA and exercise, and these benefits can continue to be healthful for the duration of their lives (Global Recommendations on Physical Activity for Health, 2010; USDHHS, 2008). PA and exercise have been found to improve physical health, mental health, cognitive function and overall well-being among older adults (Global Recommendations on Physical Activity for Health, 2010). PA and exercise programs are particularly important for older adults with low SES because this population experiences worse health than middle or high SES populations and they experience more barriers to PA and exercise than their middle or high SES peers (Plow, Allen, & Resnik, 2011; Prohaska, Belansky, Belza, Buchner, Marshall, & McTigue, 2006; Trost, Owen, Bauman, Sallis, & Brown, 2002). Previous research is limited concerning PA and exercise among older low SES populations as the majority of the research concerning PA and exercise for older adults focuses on the general population (Carter-Pokras & Baquet, 2002; Hatch, 2005; Cummings & Jackson, 2008; Kim & Richardson, 2011). PMSC currently provides exercise programs to a vulnerable older adult population in the Downtown Neighborhood of Seattle. SAIL and Yoga classes have been found to be beneficial for older adults and this evaluation will enhance the knowledge on how these programs are helpful for PMSC participants. Impact evaluations like this one are conducted by organizations to determine if a program has generated the intended effects. This information is then used to improve and modify the program.

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Chapter Three- Methods

The process of this study was based on the Grembowski's (2001) stages to evaluation and the CDC's recommended framework for program evaluation (Framework for Program Evaluation in Public Health, 1999) discussed previously. First, the PI met with the Wellness-Engagement coordinator, the class instructor, and other PMSC staff to gain an understanding of the community being served and to identify key stakeholders. The PI corresponded with the Department of Health Senior Falls Program Manager, Mary Borges to discuss the design of this evaluation and any tools she may have available. It was through this correspondence that the fidelity guidelines were identified. Second, the PI and Wellness-Engagement coordinator met to describe the program and to identify pre-existing objectives. Pre-existing objectives were in place for the SAIL and yoga class prior to this study. Based on the literature review, Grembowski's recommendations for study designs (Grembowski, 2001), the Successful aging model (Rowe, Kahn, 1998), and the desires of the PMSC it was determined direct observation and semi structured interviews would be the data collection method used. 20 direct observations and 15 semi structured interviews were implemented by the PI. Findings from these data were translated into recommendations for the PMSC and presented to the organization. In this section the methodology of this study is presented in the following sections: study purpose, sample, design, procedures, analysis, bias, and Human Subjects.

Study Purpose

The purpose of this study was to conduct a program impact evaluation of the SAIL and yoga classes offered by the PMSC with the goal of using these findings to assist the PMSC to improve their PA programs. The main question this study sought to answer is, are the SAIL and yoga classes having the intended effect on the participants? The intended effect for the SAIL and yoga classes are to meet the five objectives outlined by the Wellness Engagement Program. The five objectives for the PA programs offered at the PMSC are (1) improvement in physical health, (2) improvement in social health, (3) intellectual development, (4) cultural development, and (5) spiritual development (See Appendix A). The PMSC Wellness Engagement Program hopes to achieve these objectives through the SAIL and yoga class by providing the participants with a means for meeting the USDHHS recommendations for PA for older adults, and by implementing the SAIL class consistently with the fidelity guidelines found in the SAIL Instructor Manual.

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The SAIL and Yoga classes taught at the PMSC are particularly important because the PMSC targets low SES older adults and this population experiences worse health than middle or high SES populations. Low SES older adults also experience more barriers to PA and exercise than their middle or high SES peers (Plow, Allen, & Resnik, 2011; Prohaska, Belansky, Belza, Buchner, Marshall, & McTigue, 2006; Trost, Owen, Bauman, Sallis, & Brown, 2002).. PA and exercise interventions targeted at old adults, and specifically older low SES adults, are critical in the prevention and management of chronic disease among this population (The State of Aging and Health in America 2013, 2013).

Sample

For both observations and semi structured interviews study participants were sampled from the population of PMSC members who have participated in the SAIL class, yoga class or both. This sample was a **convenience sample** of those who were in the class on the day of direct observation and those available during the time in which semi structured interviews took place.

In order for someone to be a member of PMSC they must be 55 years of age or older, therefore the minimum age for this study was 55 years. There was no cap on age for this study as there is no maximum age limit to be a member of PMSC or to take either the SAIL or yoga class. People of all genders were included in the sample and no one was excluded based on gender or gender identity. No one was excluded from this study based on race or ethnicity. Being English speaking was not a requirement to participate in this study. If a study participant requested an interview be conducted with a translator translation services were provided. Translation services in Vietnamese was provided for three participants during this study.

Exclusion criteria included the inability to provide consent, having not participated in at least one or more yoga or SAIL class, the inability to answer interview questions based on cognitive ability or mental health barriers, and not being a member of the Pike Market Senior Center. The demographics for those who participated in direct observation and in semi structured interviews can be found in the demographics section in Chapter Four.

Design

The study design used for this impact evaluation was a one-group posttest-only design (Grembowski, 2001; Issel, 2009) which utilized direct observation and semi structured interviews

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as data collection methods. A one-group posttest design is used to evaluate a program when a program has already been implemented and no pre-testing is possible (Grembowski, 2001). One-group posttest design looks at a group of people who have been participating or have been exposed to a health intervention after the intervention has taken place (Issel, 2009).

Direct Observation

Direct observations are carried out by systematically watching and recording people's behaviors, clothing, and interactions in a particular setting (Liamputtong, & Ezzy, 2005; Harris, 2010; Hennink, Hunter, & Bailey, 2011). Observations provide a guide to build relationships with informants, provide an opportunity for the researcher to gain an understanding of how activities are organized, increase the researcher's understanding of what those being observed deem to be important, and provide the researcher with questions to ask participants later in the research process (Harris, 2010; Schensul & LeCompte, 2012).

For this thesis, twenty total direct observations were done. Ten SAIL classes and ten yoga classes were observed between the dates of June 10, 2015 and December 14, 2015. Observations were conducted about once per week over this time period. Each observation took place during the SAIL or yoga class and began 5 minutes before the classes started and lasted until 5 minutes after the class was completed. For the SAIL class direct observations lasted 60 minutes and for the yoga classes observations lasted 70 minutes. Classes were observed at times in which the PI was available to conduct observations and when the class was in session.

Observations were collected in order to gather data on who was coming to the classes, what types of activities were done during the classes, how the instructor interacted with participants and how the participants interacted with one another. This information was used to determine if the class participants were being provided with the tools to meet the Department of Health and Human Services recommendations for PA for older adults and if the fidelity guidelines were being adhered to for the SAIL class.

The aim of conducting direct observations is to understand an outcome through observing its occurrence or to assess the implementation of an initiative (Harris, 2010; Woods & Catanzaro 1988). The research aim for the direct observations of the SAIL and yoga classes were to determine how many people attend each class, the race and gender of those who attend the class, the activities that occur in the class, interactions that occurred between participants,

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and the interactions between the participants and the instructor. The observations were also used to determine if the SAIL and yoga classes were meeting the USDHHS current recommendations for PA for older adults. For the SAIL class, the observations were also used to evaluate if the classes were being taught based on the SAIL instructor's manual and the fidelity guidelines discussed above. The observations also provided the PI the opportunity to meet class participants prior to the interview process, allowing her to build relationships and trust with potential interviewees.

Development of the Observation tool

The observation tool was designed based on the observation tool provided in the SAIL Program Leader Manual and the USDHHS (See Appendix C for Observation Tool and see Appendix D for SAIL Instruction Manual Class Evaluation Worksheet). If it was found participants were not experiencing the intended effects from the SAIL and yoga classes these observational data could provide information on ways in which the SAIL and yoga class could be modified to better meet these goals.

Semi Structured Interview

Semi structured interviews were the second research method used in this study. Semi structured interviews are interviews that follow a set format and are presented to each participant in the same order and with similar wording but leave room for probes and clarifying questions (Harris, 2010). By following a set format, answers can be reliably compared to one another and interviewer bias is minimized (Woods & Catanzaro, 1988; Harris, 2010). Individual interviews are used to gather information about an individual's participation or experience with a program, the impact of a policy has on them, or to gather information in their attitudes or perceptions of a program (Harris, 2010). The benefits of conducting semi structured interviews are the ability of the interviewer to ask clarifying questions, provide a space to discuss sensitive topics someone may not wish to discuss in a group, and those with language or literacy barriers can easily be included in a study (Harris, 2010). In the development of this thesis, the aim was to conduct a total of twenty interviews. With the assistance of other planning committee members, this number was determined by the PI as an adequate number of interview participants based on the number of people who had taken a yoga or SAIL class in 2015. (see Appendix G for more demographics information)

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Development of semi structured interview tool

The semi structured interview questions were designed based on the evaluation questionnaire provided in the SAIL Leader Instruction Manual (see Appendix E for Participant Class Evaluation from the SAIL Instruction Manual), the Successful Aging Model, and the PMSC objectives. The interview tool was collaboratively created with the Wellness-Engagement coordinator and under advisement from the thesis committee chair and Basia Belza Ph.D, professor of biobehavioral nursing and health systems at the University of Washington. The remainder of this section outlines each interview question, the foundation for their development and the intended use for the findings. All questions were separated by the class, SAIL or yoga, for a number of reasons. By asking about SAIL and yoga classes separately, impacts experienced from one class could be reported separate from the other. It was expected that participants may have chosen to take the SAIL class for different reasons than the yoga class and that the effects from each class would be different (see Appendix F for Interview tool)

Questions 1:A: Have you taken the SAIL Class? B: Have you taken the yoga Class?

This question was designed to determine which of the exercise classes the interviewee had taken. Due to the nature of the convenience sample an equal number of SAIL and yoga participants was not possible. By asking which class the person had taken, participation in the SAIL or yoga class could be recorded.

Question 2: A: When did you start taking the SAIL Class? B: When did you start taking the Yoga Class?

This question was asked to determine the number of months or years a person had been participating in the SAIL or yoga class. It was expected the longer period of time a person has been in the class the greater the impact the class will have had. By knowing if class participants are new to the class, having only taken it a few times or for a few weeks, or if they have been participants for years helps give the PMSC data concerning class participation over time.

Question 3: A: How often do you come to the SAIL class? B: How often do you come to the Yoga class?

This question was asked in order to collect data concerning the frequency of participation by people in the SAIL or yoga class. This question was asked to determine if participants of the

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SAIL and yoga classes are meeting the USDHHS for PA for older adults through taking these classes. This question was also used to determine if the SAIL class is adhering to the class fidelity guideline of meeting for 3 hours per week or two hours per week with one hour of exercise outside of class.

Question 4: Satisfaction Scores A: How would you rate your overall satisfaction with the SAIL class? B: How would you rate your overall satisfaction with the Yoga class?

People were asked to rate their overall satisfaction with the SAIL class and their overall satisfaction with the yoga class. People were asked to rate their satisfaction with each class separately in order to score each class independently. By knowing the satisfaction scores of participants the PMSC can use recommendations to work toward improving the SAIL and yoga classes and improve these scores. If the scores are high the PMSC is provided with positive feedback to demonstrate participants are having a positive experience in the SAIL or yoga class. When a numerical ranking system is used, the averages provide quick insight into the majority's opinion of the program (Jones & Rose, 2005). The satisfaction scale used the terms not at all satisfied, slightly satisfied, somewhat satisfied, very satisfied, and completely satisfied. People were asked to pick which term best described their overall satisfaction with the SAIL or yoga class. By asking participants to rate their satisfaction with the class at the start of the interview this question also helped to set the tone for the remaining interview. In the analyses phase these scores were also given a numeric value from 1-5; not at all satisfied is equal to 1, slightly satisfied is equal to 2, somewhat satisfied is equal to 3, very satisfied is equal to 4 and completely satisfied is equal to 5.

Question 5: A: Why did you decide to take the SAIL class? B: Why did you decide to take the yoga class?

The purpose of asking this question was to investigate if goals for the PMSC are consistent with the goals of those who participate in the SAIL and Yoga classes. This question was also used to explore ways that SAIL and yoga class participants may be living in adherence to the Successful Aging Model. Findings from this question were intended to be used to help the PMSC understand what motivates their members to take the SAIL or yoga class.

Question 6. A: Please describe your experience in the SAIL class. B: Please describe your experience in the Yoga class.

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Probes

- **Tell me more about your experience:**
- **interacting with the teacher**
- **interacting with other students**
- **Feeling about the exercises or difficulty level**

This question was asked for a number of reasons. This question helped to verify observation data collected and gave insight into the person's experiences while in the SAIL or yoga class. This question also allowed interview participants to discuss ways in which they may be experiencing changes to their physical function, social interactions with the instructor or other students, and how this class may help them to engage in life, all of which are concepts from the Successful Aging Model and found in the PMSC objectives. Findings from this question were intended to help the PMSC to understand the SAIL and yoga class from the participant's perspective.

Question 7: A: Describe ways in which the SAIL class has impacted your life? B: Describe ways in which the yoga class has impacted your life?

Probes

Tell me more about:

- **Physical changes you have experienced as a result of the class**
- **Emotional changes you have experienced as a result of the class**
- **intellectual/cognitive changes you have experienced as a result of the class.**
- **Spiritual development which has occurred as a result of the class**

The design and purpose of this question are based in Successful Aging model, and the objectives of the PMSC for the PA programs. This question was asked to determine what experiences the participant's believe they have experienced as a result of the SAIL or yoga class. Probes were developed based on the three characteristics of the Successful aging Model along with the five objectives of the PMSC. The use of probes allowed the PI to clarify or investigate information during the interview. The findings from this question were intended to give the PMSC insight on ways in which people feel they have been affected by the program.

Question 8. A: What do you like best about the SAIL class?B: What do you like best about the yoga class?

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This question was asked to engage the participants in discussion about suggestions for the SAIL and yoga class. Questions 8 and 9 go hand in hand to gather information on ways in which the participants feel the classes are meeting their expectations. This question provides the PMSC with useful feedback on areas of the classes that should remain the same or be emphasized. This question is derived from the SAIL Evaluation questions found in the SAIL Instruction Manual (See Appendix D). It was asked of both SAIL and yoga participants in order to maintain consistency.

9. A: What would you like to see change in the SAIL class? B: What would you like to see change in the yoga class?

This question allowed participants to provide feedback about the SAIL or yoga class. The intended use of asking this question was to provide the PI with additional recommendations that could later be relayed back to the PMSC. This question is linked to questions 5 and 8. If the participant's reasons for taking the class differ from the objectives of the PMSC then the classes may not be meeting the participant's personal goals. This question allows the participants to provide useful feedback to the PMSC for them to be able to improve the classes. This question is derived from the SAIL Evaluation questions found in the SAIL Instruction Manual (See Appendix E and F). It was asked of both SAIL and yoga in order to maintain consistency.

Question 10. Do you have any further questions or comments you would like to make?

This question was asked to allow people to speak freely about any other topics that may not have come up during the interview. By allowing time and an open ended question class participants may provide useful data that were not presented in the context of the previous questions (Harris, 2010).

Procedures- Direct Observation and Semi Structured Interviews

The **observation procedure** included 10 observations conducted on the SAIL class and 10 observations conducted on the yoga class. These observations took place between June 10, 2015 and December 14, 2015. Observations were made while the SAIL or yoga class took place on Monday, Wednesday, or Friday during their scheduled time. Prior to each observed class the class instructor informed the participants they would be observed by the PI, the purpose of the study, and a brief introduction of the PI. Prior to beginning observations the class instructor obtained verbal consent from all class participants. The class was informed if anyone did not wish

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to be observed no observations would take place that day. Observations took place for the entire duration of each class. Detailed field notes were kept during this process. Field notes are accounts describing experiences and observations that the researcher has made (Liamputtong & Ezzy, 2005). These field notes were then entered into Atlas.ti for further analysis.

Demographic information gathered during direct observations was collected in three ways, by the class instructor as part of ongoing data collection she conducts on her classes, by the PI before and after classes and by the PI at the beginning of each semi structured interview. The PI through observation did not collect age, gender, and race; rather they were reported by the participants.

The **semi structured interview procedure** included a total of 15 interviews conducted with PMSC members who have participated in one or more SAIL class, yoga class, or both. Not all interviews were conducted one on one. Several people requested to have interviews done with one or more other participant present. A total of nine interviews were conducted one on one; one group of two participants was conducted; and one group of four participants was conducted. The group of four was conducted with the assistance of a Vietnamese translator following the request of the participants, as all were Vietnamese speaking. The interviews took place between December 14, 2015 and February 4, 2016. During the group interviews each participant was asked each interview question one at a time.

Participants were given a choice of location for their interview of either a private room located at the PMSC, or a semi private courtyard table located near the SAIL and yoga classroom. A total of six people chose the private room at the PMSC; two one on one interviewees and the group of four chose the private room at the PMSC. The remaining nine people chose the semi private courtyard table. Prior to the interview beginning all participants were again informed of the research purpose and aims, informed their information would be kept confidential, permission to record the interview was obtained and all interviewees signed the consent form (see Appendix M for consent form).

All interviews were recorded using a digital recorder. Hand written notes were taken during each interview. The average length of the individual interviews was 15 minutes, with the shortest being 11 minutes and the longest being 17 minutes. The group of two people was 45 minutes in length and the group interview with 4 people was 50 minutes in length. Digital

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recordings were transcribed by the PI and by a hired professional transcriber. Transcripts of all interviews were then prepared for analysis.

Analysis

Content analysis was used as the analytical model for this study. Content analysis is a systematic and objective method for describing and quantifying phenomena and analyzing documents (Krippendorff, 1980; Sandelowski, 1995; Woods & Catanzaro, 1988). Through the process of content analysis, it is possible to simplify large amounts of data into fewer content related categories (Elo & Kyngas, 2007). Krippendorff (1980, p. 83) describes the use of content analysis as “a means for researchers to make valid inferences from data, with the purpose of providing knowledge, new insights, and recommendations for action”.

Atlas.ti was the computer software program used for analysis of the data collected for this study. Atlas.ti is a commonly used computer software program designed to help researchers organize and uncover complex information hidden in unstructured data such as field notes, interview transcripts, multimedia data, photos, and video recordings (Silver & Lewins, 2007). By using this software researchers are able to use tools to locate, code and annotate raw data and to visualize the relationships within the data (Silver & Lewins, 2007).

Observation notes were handwritten at the time observations were taking place. Observation notes were typed as soon as possible after the observation took place in order to ensure accuracy (Liamputtong & Ezzy, 2005). Observation notes were then grouped into two groups, SAIL class and Yoga class. Observation notes were coded, stored, and organized using the computer software Atlas.ti.

During the **semi structured interview**, handwritten notes were taken by the PI as well as digital recordings. Semi structured interviews were then transcribed by the PI and a hired transcriber. Both hand written notes and transcripts were then evaluated by the PI using content analysis and Atlas.ti.

Coding is the process in which field notes, transcripts and documents are reduced to workable units but also retain their meaning (Woods & Catanzaro 1988). A code is defined by Woods and Catanzaro as “ a category derived from the research question, and the key variables of the study, or it may emerge from the data (Woods & Catanzaro, 1988, p. 448). By coding field notes and interview transcripts researchers are able to assemble and retrieve data that is

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meaningful to the study but also reduce the bulk of the information. This allows quantitative data to be more easily analyzed and findings to be clearly presented (Woods & Catanzaro, 1988)

Codes can be generated **deductively** or **inductively** in qualitative research and both code generating methods were used in this study. Deductive generated codes are derived from the literature, from the researcher's insight, and, in this case, the interview guide prior to data analysis taking place (Hennink, et al., 2011). Inductively generated codes are noted as relevant by the researcher as analysis proceeds. These codes are grounded in those data (Elo & Kyngas, 2007). Hennink et al. states "Inductive codes are valuable as they reflect the issues of importance to the participants themselves, which may be different from those anticipated by the researcher. Searching for inductive codes allows for the data to 'speak for itself'; it is central to qualitative data analysis (Hennink et al., 2011, p. 218)."

The first step of data analysis involved reviewing each data source line by line and identifying concepts and assigning codes to the information (Hennink, et al, 2011; Woods & Catanzaro, 1988). The PI systematically examined all interview transcripts, identified keywords, and assigned codes to selected phrases, terms, and concepts within the data. This information was recorded in a codebook. First the 15 interview transcripts were reviewed and coded using the deductive codes created. During the second read through inductive codes were added. These first two steps were done by hand in order to develop a rudimentary codebook and to develop an understanding of the data. Next the 15 interview transcripts were entered into Atlas.ti in order to organize the data and create the final codebook. For this study an initial 44 deductive codes were developed based on the research questions, the conceptual framework, and the Successful Aging model. Inductive codes were added throughout the analysis process. Initially, 24 inductive codes were produced in the coding process resulting in a total of 68 codes at the first stages of coding. By repeatedly reviewing the interview transcripts it was found many of these original codes were never discussed or there was overlap among the codes; therefore some codes were removed or distilled and combined with others. See Table 3 for final code theme and related sub-theme codes.

Once coding was complete, data were organized based on the research questions and data categories. This information is presented in Appendix B . Along with code themes, definitions from the literatures of these themes and subthemes are presented.

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Trustworthiness and Confirmability

Trustworthy studies are credible, transferable, confirmable, and dependable (Lincoln & Guba, 1985). Steps that were taken in this study to ensure trustworthiness were SAIL and yoga class participants were asked prior to the study taking place about study design and interview locations. For example, participants were asked if they would prefer focus groups or one-on-one interviews and if they would rather meet at the PMSC or in another location. Based on this feedback, it was determined a semi-structured interview would be best for the majority of participants but those who wished to do a group interview would be able to do so. It was also determined participants would be given a variety of options for interview location. Lincoln and Guba (1985) expand on the concepts of external validity and generalizability (concerns in quantitative research) and discuss the concept of **transferability** of qualitative research. Transferability refers to the extent in which a study's findings can be utilized by other settings (Lincoln & Guba, 1985). The findings from this study may be transferable to other senior centers that provide PA programs as an example of how PA programs were effective in improving the healthfulness of a group of older adults. Extensive journal keeping was done so that steps could be seen and replicated by other researchers and the process of this study is discussed in the process section of this chapter.

Confirmability refers to the degree in which the data is derived from characteristics and ideas of participants and related literature and not from the researcher's biases (Polit & Beck, 2004; Harris 2010). Confirmability was insured in this study by reporting finding from semi structured interviews in the words of the participants. Getting participant feedback on the coding of interviews would have added to the confirmability of this study but due to time constraints this was not possible.

Bias refers to an influence that produces or distorts study results and can affect the validity and trustworthiness of a study (Polit & Beck, 2004). Possible areas for biases that may have affected the trustworthiness of this study are selection bias, observation bias, researcher bias, respondent bias, (Polit & Beck, 2004). Selection bias arises when the study population is not a random selection from the target population for which a statement is to be made (Polit & Beck, 2004). This is possible as the study participants for this were not randomly selected but a convenience sample. Observation bias and researcher bias occur when the researchers own

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thoughts, feelings, or beliefs influence the interpretation of data. This was a possibility because data were collected only by the PI. In order to limit observation and researcher bias twenty observations were done and results were compared and numerous reviews of interview transcripts were done. Respondent bias occurs when participants alter their behavior or responses as a result of the researcher being present (Polit & Beck, 2004). Limiting respondent bias was attempted by building trusting relationships with participants, and a permissive atmosphere and frankness was encouraged during the interviews.

Human Subjects

Human Subjects approval was obtained from the University of Washington Human Subjects Division prior to the start of this study. Based on the information provided to the Human Subjects Division and the definition of research under 45 CFR. 46.102(d), the University of Washington Human Subjects Division determined IRB approval was not required for this project (see Appendix K for Human Subjects letter). Along with Humans Subjects approval a Memorandum of Understanding (MOU) was obtained between the University of Washington, the PI, and PMSC (See Appendix L).

Chapter Four- Findings

The purpose of this study was to conduct a program evaluation of the SAIL and yoga classes offered by the Senior Center with the goal of using these findings to assist the Senior Center to improve their physical activity programs. The findings from this evaluation provide the PMSC with information that can be used to modify and improve the SAIL and yoga programs in order to ensure these classes are most effective for the participants. The method used for this study was a one-group posttest-only design utilizing direct observations and semi structured interviews. A total of twenty observations were done between the dates of June 10, 2015 and December 14, 2015 and fifteen semi structured interviews took place between December 14, 2015 and February 4, 2016. It was the intention of the PI to conduct twenty interviews, however this was not possible due to time constraints of this thesis and interest of current SAIL and yoga class patrons in participating in an interview. At the time interviews took place all current class patrons who wished to participant in an interview were interviewed. One previous student, who was contacted by email by the class instructor, offered to participant in an interview but due to time constraints this was not possible.

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The key findings from this study are the USDHHS recommendations are being met for those who partake in at 2 more SAIL or yoga classes per week, most of the guidelines are being met by the SAIL class, physical function, and social benefit where the greatest benefits experienced by SIAL and yoga class participants and these lead to decreased disease and disability and an increased ability to be activity engaged in life. Spirituality, cognitive function, and cultural development were under reported.

This chapter is divided into four sections; demographics, and three sections based on this study's three research questions. (1) How do the SAIL and yoga classes meet the USDHHS for PA, (2) Is the SAIL class designed to adhere to fidelity guidelines found in the instructor handbook and (3) Are the PA classes meeting the PMSC's objectives for the program.

Demographics

Demographic information was collected in three ways, by the class instructor as part of ongoing data collection she conducts on her classes, by the PI before and after classes and by the PI at the beginning of each semi structured interview. The demographic data collected by the instructor were generously shared with the PI. In 2015 36 individuals attended at least one SAIL class and 40 individuals attended at least one yoga class. Of those who participated in a SAIL class in 2015 eleven were male, twenty five were female, two were Latino, four were Black, twelve were Asian, eighteen were White, eight were between the ages of 55-64, seventeen were between the ages of 65 and 74, eleven were between the ages of 75 and 84 and none were 85 and older. Of those who participated in a yoga class in 2015 ten were male, thirty were female, one was Latino, one was Black, nineteen were Asian, nineteen were White, nine were between the ages of 55 and 64, twenty four were between the ages of 65 and 74, seven were between the ages of 75 and 84, and none were over the age of 85. Gender, race and age were self-reported by class participants. No other racial groups were identified by participants (A summary of demographic information can be found in Appendix G)

Fifteen semi structured interviews were conducted. Of these 15 participants four were male, eleven were female, one was Black, four were Asian, nine were White, the average year of birth was 1947, and year of birth ranged from 1938-1952 (The demographics for the semi structured interview participants can also be found in Appendix G).

Question One: How do the SAIL and yoga class meet the USDHHS recommendations for PA for older adults?

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Through direct observation of the SAIL and yoga class it was found that the four recommendations made by the U.S Department of Health and Human services for PA for older adults were met by those who participated in the classes at least twice per week. Semi structured interview participants were asked the frequency in which they took the SAIL and yoga classes. For the SAIL class, the overwhelming majority reported taking the class at least twice a week. Three people reported taking the class once, one person reported taking it occasionally, one person reported taking the class once a week, three people reported taking it twice a week and five reported taking it three times per week. For those who participated in the yoga class seven out of the eleven people who reporting taking the class take it at least twice per week. Two people reported trying the class, three reported taking it occasionally, one person stated they took the class once per week, three stated they took the class twice per week and four reported they took the class three times per week. (These findings can also be found in Appendix H) For those who do not participate in at least two classes per week it is unknown if they are meeting the U.S Department of Health and Human Services recommendations as interview participants were not asked about exercise or PA taking place outside of the SAIL and yoga classes.

As discussed previously, the USDHHS first recommend for substantial health benefits is older adults should do at least 150 minutes a week of moderate-intensity, or 75 minutes a week of vigorous-intensity aerobic physical activity, or an equivalent combination (USDHHS, 2008). Ways in which this recommendation is being met by the SAIL Class is the class consists of vigorous activity, meets 50 minutes per class, and the class meets at least two times per week. Ways in which the yoga class meets this recommendation are the class is a combination of moderate and vigorous activity, is 60 minutes in length, and meets at least twice per week.

The second recommendation made by the USDHHS is older adults should also do muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on 2 or more days a week. The SAIL class is meeting this recommendation by having barbells weights used for 15 minutes per class, and ankle cuff weights used for 10 minutes per class. In the yoga class body weight is used for muscle strengthening and muscle strengthening poses are done for approximately 30 minutes of each class.

The USDHHS's third recommendation for older adults is aerobic activity should be performed in episodes of at least 10 minutes, and preferably, it should be spread throughout the

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week. The SAIL class is meeting this because aerobic activity is performed for 20 minutes of each but the yoga class is not meeting this as no aerobic activity is done during the yoga class.

The final USDHHS recommendation for older adults is they should do exercises that maintain or improve balance if they are at risk of falling. Both the SAIL and yoga class have specific exercises designed for improving balance (These findings are summarized in Appendix I).

Question Two: Does the SAIL class adhere the fidelity guidelines outlined in the SAIL class instructional guide?

Through direct observation of the SAIL and yoga class it was found that the four fidelity guidelines were mostly adhered to. As discussed previously, the four fidelity guidelines are (1) SAIL Program Leader are trained in the SAIL Program through the online course or have attended a SAIL program training, (2) classes perform all mandatory elements as outlined in SAIL Training Manual (see Appendix J for mandatory SAIL class elements), (3) The use of weights to develop strength/or for strength is included, (4) 3 hours of class instruction are conducted once a week or 2 hours can be done in class with one hour at home if needed (Program Leader Manual, 2011). The fidelity guidelines that are being adhered to are, the SAIL instructor has completed SAIL training, and the use of weights to develop strength or maintain strength is included. Areas in which the SAIL class is not meeting the fidelity guidelines are, not all mandatory exercise elements are being done, the class does not meet for the recommended three hours per week, and an educational component is not being included. The specific exercises which are not being done during the SAIL class are walk and step over obstacles, heel to toe walk backward, heel to toe walk forward and the stretch fist and fling. Also, aerobic exercises are being done for 10 minutes, not the 18-20 minutes, and strength exercises are done for 25 minutes not the recommended 15-18. (See Appendices I and J for a summary of fidelity adherence)

Question 3: Are the PA classes meeting the PMSC's objectives for the program?

In the first question of the semi structured interviews people were asked if they had taken the SAIL class and if they had taken the Yoga class. Nine people reported they had taken the SAIL class, eleven participants reported they had taken the yoga class, four people reported they had not taken the SAIL class, one person reported they had not taken the yoga class, one person reported they had tried the SAIL class once and three participants reported they had tried the

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yoga class once (See appendix P). Five people reported they had taken both the SAIL and yoga class more than once. When discussing with Participant 5, who had tried the SAIL class but had not continued, she reported “[I took] the SAIL class briefly, it was too early to get up”. When discussing with the participants who had tried the yoga class but had not continued all reported the class was too difficult for them. Participant 1 stated “Yes, I have taken the yoga class but it is too hard, too difficult” and Participant 3 stated “[The instructor] told me that I am not strong enough as half way through the yoga class I got dizzy”.

The semi structured interview data were collected and through the analysis of the semi structured interview transcripts common themes were identified. Findings have been presented here based on the nine themes identified during analysis. There was not a great deal of difference in the motivation for taking the SAIL or yoga class, and the effects experienced reported by people were similar; therefore findings are reported by theme and are not separated by research question or class. For information regarding each individual class and each interview question, a detailed summary of each interview question can be found in the Appendix Q.

As discussed in the methods section, the nine themes identified during analysis were Physical Function, Minimize Risk of Disease, Cognitive Function, Engagement with Life, Spirituality, Cultural Benefit, Most Enjoyed Element of the class, and finally Suggestions. There were some sub-themes that overlapped between themes. This can be seen in Appendix B, as some sub-themes are listed more than once. For example, *stress relief* was mentioned by some people as a disease prevention method, while others discussed stress relief as a form of spirituality. Similarly, some themes were reported to lead to, or be correlated to, other themes. For example, the development of better balance was reported to help in the prevention of falls and the prevention of falls was reported to result in the prevention of fractures.

Physical function, minimize risk of disease, and engagement with life were the most frequently discussed and discussed in the most detail during the semi-structured interviews. Spirituality, cognitive function and cultural benefit were mentioned by some people but not nearly in the depth and breadth as physical function, minimizing risk of disease and engagement with life. The most enjoyed activity had a great deal of overlap with physical function, and engagement with life. Finally, this section will conclude with the suggestions made by participants during the semi-structured interviews.

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Physical Function

Physical function was the most frequently discussed theme among all the semi-structured interview participants. People discussed being able to do the exercises for longer, with less effort, with less pain, and with more ease. The main improvements in physical function that were discussed by participants were increased strength, improved balance, and increased flexibility.

Increased strength was a common physical function mentioned by participants. For example, Participant Four stated “I was very pleased when my hips stopped bothering me that was very nice. I have muscular hips now” and Participant One stated, “Everything on the legs would get so tired and I just kept on doing them and now I can do it really easy”. Participant Eleven stated “For me it has been successful. I have been able to increase my strength and over the period of time that I have been in the class. Even after I suffered an injury and setbacks I can always start in a safe place to restore and rebuild.” Participant Four stated “When I first started I had a hard time. I could not do the stand up/sit down, I think I got ten and could not do any more. Now I can do 24 without stopping!”

Improved balance was also reported as a increased physical function. Participant Three stated, “It is pretty much what I expected and I have been happy with it. It has been really good for me and I think it has improved my balance.” Similarly, Participant Ten stated, “I have accomplished a lot. I wasn't very good at balancing or stretching until I started. I was so/so but now I am better.” Participant Four also reported improved balance, “my coordination is much better. My balance is better. Just, you know, a bunch of small benefits but it is all a result of the Yoga”.

Increased flexibility was another reported effect of taking the SAIL or yoga class. For example, Participant Three reported, “You know, as we get older and I think it is true of any age but as we get older, having joint mobility, being able to stretch muscles, that is really healthy for the body overall and [yoga] is helping me in that way. I am more flexible”. The ability to maintain physical function was reported to minimize the risk of disease and disability as well as provide means to remain engaged in life.

This increased physical ability has positively affected the participants' ability to participate in activities of daily living like household chores and remaining independent. For many people improvement in physical function has led to **minimizing the risk of disease** and the ability to be

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more engaged in life. Participant Two stated he felt the yoga class was providing him with a level of fitness he did not observe among his peers.

My energy is a lot better. I know that I am doing better than my cohort, I am shocked they look like they are ten years older than me. The benefits are very obvious (Interview 2, p. 3).

Minimize Risk of Disease and Disability

Minimizing the risk or severity of disease and disability was discussed as a reason for participating in the SAIL or yoga class and an effect experienced by the participants as a result of the class. Managing cardiovascular disease, arthritis symptoms, stress, joint pain, vestibular disease, reduced fall risk and general improvements in health were reported to be improved as a result of the SAIL or yoga class.

Participant Three reported management of his vestibular disease as both a reason for taking the SAIL and yoga class and reported improvement since starting the classes.

I take the class because I have vestibulopathy. It is an inner ear disorder of the vestibular system so I have a balance problem. So it is to strengthen my balance. SAIL and yoga are challenging my vestibular system, my balance system, and I am seeing slight improvement. At the very least, I do not see continued degradation, deterioration of my balance system and I am even seeing slight improvement. So for me that is the biggest benefit (interview 3, p. 3)

Similarly, Participant Two reported one of his reasons for taking the yoga class was to help manage his Post Traumatic Stress Disorder (PTSD) symptoms and the class has been effective in doing so.

[Yoga] helps me move much more freely. Emotional benefits is one of the reasons I got problems with depression and PTSD. It removes one distraction from the list, I just feel so comfortable when I exercise. Yoga helps me sleep better which is another piece of the equation for dealing with the depression. Well I think when I am grieving and stuff I can let go some. Like let go of the tension (Interview 2, p.3)

Numerous people also discussed **fall prevention**, as a means for preventing injury.

Preventing falls was important to people because a fall can lead to significant injury further limiting their ability to be engaged with life or live independently. When discussing fall prevention Participant Seven reported the SAIL class has helped her prevent falls and that fall prevention is valuable to her.

There is one [exercise] that [the instructor] calls getting off the bus. And [it got me] thinking about when you are turning to the back and you are having to move your leg to the side and getting up. [This has] improved my balance. And I know that [the instructor] has a couple of movements that are related to falling forward or falling backward. And the falling forward I have actually used a couple of times for a trip. I put my leg out there and balanced. So that has been helpful because I see friends of mine that have had falls and sometimes they can be very devastating (Interview 8, p. 4).

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Multiple people reported **general feeling of improved health** stating things like Participant Twelve, "After I talked to the doctor and the doctor says the class helped me a lot and he told me it improved my health in general. After the class I feel better, I feel healthy". Participant Eleven stated, "I think I feel pretty good, you know. I think my health improves when I take the class" and Participant Thirteen, "My health has improved every day because of the class. I had a heart problem but since taking the class I feel it has improved. My heart feels stronger and better.

After experiencing a fall, Participant 5 reported using yoga as part of her injury recovery plan, "I slipped and fell on ice and just getting back in yoga helped repair whatever damage had been done." Similarly to Participant 5, Participant One stated she took the class to recover from heart surgery, "After the PT for the heart surgery I needed an exercise class and I did not want a sit down class and so when I came here to this one. This one was perfect for me."

Decreased stress was reported as being a physical, cognitive, and spiritual benefit by participants when discussing the effectiveness of the yoga class. Participant Eight reported yoga has helped her in times of grief stating, "[Yoga helps] when I am grieving, I can let go some. Like let go of the tension". When discussing stress Participant Fourteen stated, "I think Yoga helps with my situation as I try to clear my mind." and similarly Participant Five stated, "Emotionally I feel like I am calmer and if I have problems, that little thing we do at the end, I kind of sort things out in my mind. It is like I am going to be a better person now. It is just stuff you go through and it is like meditation I think and I like that".

Engagement with Life

All the interview participants discussed how the SAIL and yoga classes contributed to their engagement with life whether through the development or maintenance of physical abilities to remain productive in life and/or the development of social relationships.

People discussed the ability to be **productive** as motivation for taking the class and a result of taking one or both of the classes. Participant Seven reported one of the reasons she took the SAIL class was to be able to continue to work.

[I am taking the SAIL class] because I am stiffening up and that is not good. And another strong reason; I work in the market and I have to pull a heavy cart and I need my strength for work. When I first started [the instructor] wanted us to back up and I told her, 'oh you can't back up ever in the market'. You have to turn around and look. And she insisted we do that. And now I realize that the ability to back up is really important. I

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shouldn't ever say to myself, I don't back up. Or I don't lift. Or I don't reach. Yes I do, and because of [the instructor] I do it safely (Interview 8, p. 4).

Participant seven also stated the things she likes best about the class is that it has given her the ability to be stronger in her work. She stated, "SAIL changed my life. I can pull my cart home and before I was having trouble. I pulled my back out doing that before the class."

Independence was also mentioned when discussing active engagement with life during the semi structured interviews. People reported finding their independence important and the SAIL and yoga classes have been tools to help them maintain that independence. For example, Participant Eight and Six expressed the importance of maintaining their independence and how the classes have helped them do so.

The most impact it has had on my life is that I am able to do more. I can reach further. More often I can do my housework. I can reach the floor. I can reach up high. It's very valuable. When you cannot do things like that it limits your life (Interview 9, p. 3).

Someone told me that you have to be able to get up and down from the toilet if you want to stay in your living situation and not go into assisted living. That it is very important to be able to get yourself up and down (Interview 7, p. 3).

Many semi structured interview participants discussed the **development of social relationships** as both a reason for taking the classes but also as a result of participating in the class. Participant Five, who stated he mostly took the class for physical benefits added that the class has also helped him not feel so isolated.

Well certainly it has helped with the vestibular issue but also, I am a writer and so I mostly work alone and so some days where I do not have any outside meetings that could be my only social contact. So I appreciate that. I don't intend to be a hermit (Interview 2, p. 4).

Beyond the development of social relationships in the class it was reported that the PA classes have provided some people with a **sense of belonging** to a community. Participant Ten reported feelings of being able to identify with others from the class and Participant Three stated the casual atmosphere made him feel comfortable.

I enjoy the other class veterans like me, and I talk to them outside of the class and they are good people. We will sit and giggle about something we do in yoga or SAIL or something; just because it is a common ground that we can exchange and share camaraderie. It allows me to feel more functional and helpful (Interview 9, p. 6).

personally I like the fact that it is not a fancy environment. You know, I don't feel like I am with a whole bunch of rich snooty people. I like the fact that there is a diverse group and that there is a diversity of economics. I like that about the class (Interview 2, p. 5).

Those who took the yoga class spoke of the importance of having lunch together after class. Due to a grant linking a provided meal and the yoga class the PMSC has a lunch table

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reserved for yoga class participants at the PMSC. Originally interviews were arranged to occur after the yoga class and before lunch was served. After the first interview it was found that there was not enough time to participate in an interview and make it to lunch on time. The possibility of missing lunch was very upsetting to the yoga class participants and arrangements were made so the interviews would not interfere with lunch. Multiple people spoke to the added benefit of having lunch together as a way to continue to build relationships. Participant Eleven stated in regards to the reserved lunch table,

it is a privilege to sit at the table reserved for yoga. [other PMSC members] never forget to acknowledge our presence. Even if we don't sit at the table. That table is pretty important (Interview 9, p. 7).

Interactions with Others

Overlap was found between the **interactions with other students** and the development of socio-emotional support. When participants discussed their interactions with other participants in the class all reported having positive experiences and many linked their positive interactions with other students to the development of socio-emotional support. For instance, Participant One stated, "I like pretty much all of [the other participants], anybody who talks. I am usually also quite talkative, I am a social person", and Participant Nine stated "I enjoy the other people. They are very wonderful and involved people I think". Similarly, Participant Two stated, "The people that I take the classes with I enjoy their company" and Participant Eight reported, "[Yoga] has really gotten me to make friends with people, it gets me out."

Another common theme discussed when asked about their experiences in the SAIL class was their **interactions with the instructor**. Overall people reported receiving helpful feedback from the instructor, enjoyed her friendly banter during class, and found her instructions effective. For example, Participant Nine stated, "I find [the instructor] to be highly qualified as a teacher of strength and balance. She is very knowledgeable of the human body and what it can and cannot do, especially for seniors. Similarly, Participant Eight stated, "[The instructor] is really good. She is really positive. She will tell me this way might be better or something like that. That is what I like about her", and Participant Two reported "[The instructor] takes it very seriously, she is a very responsible person".

Cognitive Function

Even though cognitive function and intellectual development were probed during the semi

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structured interviews, people did not report much information on the topics. Only one person reported on cognitive improvements as a result of the SAIL class. Participant One stated exercise has contributed to improvements in her cognition.

I believe that the more you do exercise-wise the more you are able to do [mentally] Even if I just walk more in between classes that I have an improvement in my cognizance (Interview 1, p. 3).

Similarly to the SAIL class participants, the yoga class participants did not have much to comment on concerning cognitive or intellectual benefit. Some participants did say yoga decreased stress which lead to a clearer mindset but none spoke specifically about cognitive function. Participant Eleven did state, "Yoga helps deliberateness in effort, nutrition, everything, it provides a deliberate awareness."

Spirituality

When discussing spirituality about half of the participants reported feeling the SAIL class had been a way to improve spiritually. In response to being asked about spirituality Participant One responded by saying, "the more I am into my body the more I am in my life. I always say if I am walking and talking I am okay." Participant Four stated, "[The spirit] is the same. I am more in tune with my body and my spirit because I am working on my body my spirit is also getting worked on."

Meditation was coded under spirituality and Participant Seven stated, "[SAIL] could be meditative, like a moving meditation. And I think the breathing, controlling your breath; the in and out breathing you know as you are exercising, can be like a meditation focusing on your center.

Mood was also coded under spirituality and Participant Four stated, "But I think exercising keeps me in a good mood. I prefer to be in a good mood all of the time. It is very rare that I get upset about anything."

When asked to discuss how the yoga class has affected their spiritual growth participants who responded to this question stated yoga reported feelings of **mindfulness**, the ability to **emotionally surrender**, and the use of **meditation** as ways yoga has improved them spiritually. Participant Eleven stated,

Yoga has helped me to refine the breath. The strength in the breath, the quietness. I like to come to her yoga class, surrender and let her lead. And I don't have to do anything but follow. I can close my eyes almost completely and just follow. I like the opportunity to surrender (Interview 9, p. 8).

Similarly, Participant Five stated,

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I have noticed changes in my spirituality, that is this whole thing about meditating. I get home and I have the meditation. I think I am going to do this at home too but I have not so far but I intend to. [the instructor] gave me a CD too, which I thought was very sweet (Interview 5, p. 3).

Participant Twelve saw the yoga class as an opportunity for spiritual “tuning” stating, “through the music, even if I don’t know the exercise the yoga class sometimes seems like tuning, like tuning my mind”.

Cultural Benefit

Culture was not discussed by most of the participants during the semi structured interviews. **Cultural benefit** was not listed as a reason to take the SAIL or yoga class by any of the participants. This may be why very few people discussed learning from other’s cultures during the semi structured interviews. However, a few people did speak on the cultural benefit of the PA program. For example, Participant Five discussed that the yoga class has provided her with the opportunity to build a friendship with another participant who practices a different religion than she does. She also went on to discuss enjoying having the Vietnamese participants in the yoga class.

He took me to the Christian Science Reading Room. I went in with him because I like him as a friend. He has these computers there and I read some of the books. It was kind of an experience, I never thought the Christian Science Reading Room was anything but being a building (Interview 5, p. 4).

Well, I find the Vietnamese people, I find them very interesting. I like learning about their culture. They have not been coming [as] much and I am kind of disappointed. They really do not say much because of their language barrier but I think it is nice having them [in the class] Maybe it would be helpful to have a translator come in once in awhile (Interview 5, p. 5).

Most Enjoyed Activity

When asked what they liked best about the SAIL and/or yoga class people stated very similar answers for both the classes. They enjoyed having improved physical function, the time of day and frequency of the class, the classes’ location, price, the instructor, and meeting other participants. Participant Fifteen stated, “I like everything about the class, [The instructor] is very friendly. I think she tries the best she can and my body is stronger.” Participant One, Four, Six and Twelve, stated the following respectively,

I like that it is the morning because it isn't too early, it is, you know, 9:30 and it is a nice about of time. I also like the fact that it is in a place where there is a lot of people. I like being around the people in the senior center and I have belonged here since I was 55 and I am 73 now (Interview 1, p. 6).

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I like that is free and it is just up the street, maybe a block away from my apartment. no excuses! I don't think about it anymore, I just go. If I think about it I will talk myself out of going (Interview 4, p. 6).

The regularity I think is a good thing. The same exercises, that the class is three times a week, and it has been going on for so long. And I like the challenge. It looks simple but it actually is not. (Interview 7, p. 6).

I like that It is diverse. Even men are in the class, I like the social aspect, even if we don't talk. I like being in the room with my kind of people. I like being an example for others and it is free (Interview 6, p. 6).

Suggestions

When asked to make recommendations on improvements for the PA programs participants had suggestions for things they would like to remain the same and things they felt would improve the classes. Common suggestions people felt should not be changed were the difficulty level of the classes, the length the classes and the frequency. For example, Participant Three stated “[the difficulty level of yoga] is adequate. I mean it is good for me. Not too easy, not too hard” and Participant Eight stated “I like the regularity, the same exercises, the three times a week and, it has been going on for so long”.

When SAIL participants were asked about what changes they would like to see people had a variety of suggestions but most were suggestions on the **classroom space**. Other suggestions included increasing recruitment and more difficult exercises. Many of the participants did not have suggestions. They reported being satisfied with the class or not having any suggestions at the time. Suggestions for improving the space included a bigger space, installing a water fountain, new paint on the wall, changing the music, and educational posters added to the wall. Participant Four stated,

Today it was a little crowded because more people came. Usually there is just not that many people so yes, it is big enough. But if they can give us a bigger room that would be good too, more people could come (Interview 4, p. 8).

Participant Ten stated, “I would like to see the paint on the wall be a different color. I am grateful for the space, all of it, but I think the color could enhance what we are trying to do”. In response to Participant Ten’s comment on paint Participant Eleven stated “I would prefer to have them demonstrate some of the stretches that we do on the walls; posters to influence the programs that we are doing”.

One suggestion concerning the difficulty level of the class was made by Participant One.

maybe it could be a little bit overall more difficult. I do not want to do jumping jacks but

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maybe just a little bit more difficult. Once you learn how to do [the exercises] you do not have to think about doing them (Interview 1, p. 5).

Participant Three made observations and suggestions concerning participation stating,

I would like to see expansion in participation, I mean, just from a social point of view and moral point of view, over at the [PMSC] there are others, mainly guys, that are not in good health and here is a free class right in front of them and they would rather sit there (Interview 3, p. 6).

When asked about what they would like to see changed in the yoga class the most common suggestions were changes to the classroom. Participant Two stated he would like a larger space and the class arranged in a different way.

A larger exercise space. More people could be there but also because of my size I need more space and so I always feel like I am kind of scrunched in a little bit. in the ideal world, I would like almost a half moon [shaped class]. I think that would be very comfortable for everybody (Interview 2, p. 7).

Participant Fourteen and Participant Fifteen also stated “the room is too small” and “we need a bigger room” respectively. Another suggestion for the room that participants made was temperature control it was noted that the room was too hot in the summer and too cold in the winter. The floor was also a common concern. However, since the interviews took place the PMSC has installed new floors. The responses in the interview were to the concrete subfloor, not the new floors which have recently been installed. In response to the floor Participant Two stated “Oh boy. That is some of the hardest concrete I have ever been on” and similarly Participant Seven stated, “The space could be better by not having a concrete floor.” Participant Seven stated “So, something I have noticed. In the summer it was really hot. The fans did not help much” and Participant Fifteen stated “In the winter the room is too cold”. The length and frequency of the class was also mentioned. Though not a common suggestion, Participant Five suggested making the classes longer and Participant Seven suggested adding yoga classes to Tuesdays and Wednesdays or having more classes later in the day.

The findings from this study suggest that the PMSC PA program is providing members with an opportunity to meet the USDHHS recommendations for PA for older adults, the SAIL class is meeting almost all of the fidelity guidelines and the objectives for the PA program are being met. The interview participants provided valuable insight into the successes of the PA program as well as areas for improvement. Recommendations based on these findings are addressed in the following discussion section.

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Chapter Five- Discussion

The purpose of this study was to conduct a program impact evaluation of the SAIL and yoga classes offered by the PMSC with the goal of using these findings to assist the PMSC to improve their PA programs. As discussed previously, the main question this study sought to answer was, are the SAIL and yoga classes having the intended effect on those who participant in the classes? The intended effect for the PA programs offered at the PMSC is to contribute to the wellness and healthy aging of the PMSC members.

In this study the PI found numerous ways in which the PMSC is successful in providing members with a means for healthier aging. Program participants were presented with a means for meeting most of the USDHHS recommendations for PA for older adults (USDHHS, 2008). The SAIL class adhered to most of the fidelity guidelines found in the instructor handbook (SAIL Program Leader Manual, 2011). The SAIL and yoga classes were found to meet most of the program objectives for the Wellness-Engagement programs. Participants discussed at great length their enjoyment of the classes and the positive effects they have experienced as a result of taking the classes. The average satisfaction score for the SAIL class was 4.1 and the average satisfaction for the yoga class was 4.5 (see appendix J, Table 15).

This study has also made contributions to the field of community health nursing and the field of public health by expanding the data available on PA programs among low SES older adults and by contributing to the science of program evaluation. In this chapter comparisons to previous studies are made, the relationship between the findings and the Successful Aging Model are reviewed, contributions to nursing and public health practice are discussed, study limitations are discussed, and finally, suggestions for further investigation and suggestions for the PMSC are provided.

Relating to the literature

Finding from this study are consistent with the expectations that by participating in PA older adults will experience improvements or maintenance of their health found in the literature. Finding from this evaluation are consistent with other evaluations conducted on PA programs discussed in the literature review. For example, findings from this project were similar to the findings found in the evaluation of the “Tai Chi in the Parks” program that took place in Lima Peru. Both this evaluation and the “Tai Chi in the Parks” program used participant interviews and

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observations to evaluate the impact of the intervention and both projects looked to explore more than physical benefits of a PA intervention (Community Tool Box; Potvin & McQueen, 2008). Both projects faced the challenge of conducting an evaluation with no pretesting possible, relying on post-test only results for their findings. The results from each evaluation demonstrated that the PA interventions had been effective in improving the health of those who participated. Like the “Tai Chi in the Parks” evaluation, this study also found more women than men participated in the intervention.

Findings from this study are also consistent with the evaluation conducted on the ALIVE program, a 10-month health promotion program for low SES older adults (Buijs et al., 2003). One of the methods used for the ALIVE program was phone interviews with those who had completed the program. It was found in both the ALIVE study and this project that the most frequent reason for joining the program was recognizing the physical benefits of PA. Both studies found that participants reported the greatest effect was improved physical function, and improvements in socializing. The ALIVE project found improvements in mental health to also be a great benefit (Buijs et al., 2003). Though this was reported by some participants it was not reported as one of the greatest impacts in this study.

Relating to the Successful Aging Model

During the development of the study methods and the analysis process it was remarkable to discover the similarities between the data collected, the Successful Aging Model, and the PMSC objectives for the PA programs. As discussed earlier, The main four characteristics of the Successful Aging Model are (1) low risk of disease and disease related disability, (2) high mental and physical function, (3) active engagement in life, (4) maximize the maximizing positive spirituality. The objectives for the PMSC are in close alignment with the PMSC objectives. In fact, only the objective of *Cultural Development* is not discussed by the Rowe and Hahn in the Successful Aging Model. This overlap between the PMSC objectives and the Successful Aging Model lead to the use of the Successful Aging Model as a strong foundation throughout this project.

One difference between the data collected in the study and the Successful Aging Model was the hierarchy of characteristics. As discussed previously, the Successful Aging Model states the absence of disease and disability makes it easier to maintain mental and physical function

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and maintenance of mental and physical function in turn leads to the ability to be more actively engaged in life (Rowe, Kahn, pg. 39, 1998). However, people reported mental and physical function lead to the prevention of disease and disability which then led to the ability to be more actively engaged in their lives.

Study Limitations

There were a number of **limitations** and **challenges** experienced during this study. These should be taking into consideration for future projects conducted with the PMSC. A trusting relationship with SAIL and yoga class participants and other PMSC members was not initially in place with the PI because she was outsider to the PMSC community. It took a great deal of time, frequent visits, and interactions with staff and PMSC members to build the critical relationships needed for this study to be successful.

Another limitation of this study was the study design. The study design used for this evaluation was a one-group posttest-only design. This evaluation took place after the intervention had been in place for a number of years, therefore no pretesting was possible. Due to the limited time and resources available for this project the PI was not able to interview a comparison group of PMSC who had not taken the SAIL or yoga class. Having been able to do pre testing or interviews with a comparison group would have provided much more robust data for this project.

The methodologies of direct observations and semi structured interviews also have limitations. These direct observations were time consuming, recording field notes while observing the classes was challenging with one researcher, some observations could have been missed while field notes were being written, and field notes were subjective to the PI's perspective. The limitations of the semi structured interviews no interviews were conducted with participants who no longer take the SAIL or yoga class and and a second researcher was available for coding of transcripts or interpretation of findings.

Areas for further Investigation

There are a number of areas in which further investigations is needed. Participants were asked to discuss their attendance in the SAIL and yoga classes but participants were not asked to elaborate on programs they participate in outside the PMSC. Investigation on outside programs available to PMSC members could bring to light possible collaborations between the PMSC and

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outside programs. This information could lead to further opportunities for members to participate in other healthful activities.

To further understand the physical improvements experienced by SAIL and yoga class participants pretesting and post-testing with members is recommended. This can be done using the Senior Fitness Test discussed below in suggestions.

This study did not have the ability to interview or observe non-class participants and it would be greatly beneficial to gather information on the barriers preventing PMSC members from participating in the SAIL or yoga class. By understanding the barriers preventing other PMSC members from participating in the SAIL and yoga classes the PMSC would have the ability to design other programs to meet the needs of those members. This is needed because the participants of the SAIL and yoga class are not representative of the PMSC population. About 22% of the PMSC members identified as female but the class participants for SAIL and yoga class were 44% and 30% respectively. Also the racial diversity of the PMSC is not represented in the SAIL and yoga classes. 36% of PMSC members identified as White, 26% identified as Black, African-American or other African, 16% identified as Hispanic or Latino, 9% identified as Asian or Asian American, 4% identified as American Indian or Alaska Native, <1% identified as Hawaiian Native or Pacific Islander, 3% identified as multiracial. 50% of SAIL participants identified as White, 33% identified as Asian, 11% identified as Black, and 5% identified as Latino. In the SAIL class 47% identify as White, 47% identify as Asian, <1% identified as Black and <1% identified as Latino. Further investigation is needed to understand ways to recruit men and Black and Latino members to participate in the SAIL and yoga classes.

A mix of information was provided on whether or not the participants felt they were receiving adequate instruction during the class. Some participants discussed they hoped to have more detailed instruction while others mentioned the instruction was adequate. As this question was not specifically asked during the semi structured interview further investigation on instruction during the classes would be beneficial to clarify this mixed information.

Further research is also needed outside of the PMSC. Replication of this study would not only contribute to the transferability of this study but replication research is critical for the development of nursing and public health science (Polit & Beck, 2004). Further research is needed to develop an evaluation tool for yoga classes being implemented with older adults.

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Unlike aerobic classes like SAIL, there is not currently a standard for evaluating yoga classes for older adults; the development of this tool would be helpful to make evaluation of yoga classes more transferable.

Contributions to Community Health Nursing and Public Health

Not only is this study valuable to the PMSC and its members it has also made contributions to the sciences of community health nursing and public health. The findings from this study contribute to the limited information available concerning PA and low SES older adults. Findings from his evaluation are consistent with findings from previous studies discussed above, and expand on the idea that PA programs are effective in improving the healthfulness of older adults. The sciences of community health nursing and public health are committed to health promotion that is beyond physical benefit, looking at individuals and communities through a holistic lens (Steinberg, 2007). This study, like the ALIVE project and the Tai Chi in the Parks project, looked beyond physical benefits from PA and explored other areas of healthfulness such as social development.

Evaluation is a critical component to the science of community health nursing and public health (Ervin, 2002). This study contributes to the science of program evaluation and provides useful information on the process, limitations, and successes required to conduct an evaluation taking place in an urban senior center with low SES older adults. By being transferable, this information can also be useful for other organizations and senior centers who wish to improve their PA programs.

This study also contributes to the literature available on specifically SAIL and yoga classes. This study will be shared with the Department of Health Senior Falls Program Manager, Mary Borges and will contribute to the data available concerning the SAIL program. Evaluations on yoga classes, and specifically yoga classes conducted with older adults is very limited, this study will contribute to the information available on yoga.

Program Suggestions

- Add **Field-based Physical and Mobility Assessments** to both the SAIL and yoga class. Field-based physical and mobility assessments are used for numerous reasons, to determine who in a class may be at risk for mobility issues, to determine if the program is appropriate for an individual, to motivate participants to set specific goals, to provide a

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means for feedback from the instructor, to identify participants who may need to be referred to their physician, and to assess the benefits of the PA program (Jones & Rose, 2005). No formal assessment was observed during the SAIL or yoga class and by implementing an assessment the PMSC instructor will clearly identify abilities, limitations, and records of improvement for each participant. The Senior Fitness Test (Rikli & Jones, 2001) is suggested by Jones & Rose (2005, p. 86) as one tool which can be used for field-based physical and mobility assessments.

- **Design the exercise space to be more welcoming and safe.** Multiple suggestions were made by participants concerning the classroom space. The most common concerns related to the floor but it should be noted that in the time since the interviews took place a new floor has been installed. Other suggestions concerning the room were to change the paint color, the desire for the adding art or educational posters on the walls, add more variety to the music played during the class, provide a water source in the classroom, and install more fans and more heaters to help regulate the temperature of the room.
- Expand **collaboration** between the SAIL and yoga classes and other activities at the PMSC. The SAIL and yoga instructor is currently involved in other wellness and health education classes within the PMSC, coordinating these classes with the PA program has the potential to expand the intellectual and cognitive benefit to class participants. The collaboration between the other wellness classes and the PA program could also be one way that the SAIL class could meet the educational requirement currently missing from the class.
- Expand **collaboration** between the PA activities at the PMSC and other community PA programs. Currently a *Sound Steps* class meets at the PMSC on Tuesdays. This class is lead by Seattle Parks and Recreation and by encouraging participants of the SAIL and yoga classes to attend the Sound Steps group yoga class participants have an opportunity to add an aerobic exercise to their weekly PA regiment. One participant also suggested collaborating with the Pike Market Clinic as they often have wellness classes offered but the PMSC members are unaware of them.

Suggestions for the SAIL Class

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- Expand the SAIL class to **one hour**. In order for the SAIL class to adhere to the fidelity guideline of 2 hours of class per week with one hour of work at home or 3 hours of class per week the current class time needs to be lengthened.
- Make adjustments to the class to ensure all **mandatory exercises** are included. Currently only a few of the mandatory exercises are missing from the SAIL class (See Appendix J and Appendix O). With slight adjustments to the program all mandatory exercises can be included in the class.
- Add an **educational component** to the SAIL class. Currently the SAIL class is missing the mandatory educational piece to the class. Cognitive and intellectual benefit had limited responses in this study and by adding an educational component to the SAIL class this program may be able to fill this objective more effectively.

Suggestions for the Yoga Class

- Currently no aerobic activity is being done during the yoga class. This is expected as yoga is not an aerobic exercise but education could be provided during the yoga class on ways in which participants could participate in aerobic activities outside of the class. This could include having class participants share activities they are currently involved with, provide a list of other PA programs available in the area, or instruction on aerobic activities participants can do at home.
- Provide exercise instructions for a variety of fitness levels in more detail. Options are currently being provided during the SAIL class, however, some participants reported wanting more detailed instruction for different fitness levels.
- Investigate options for instructions to be delivered in Vietnamese in order to ensure the Vietnamese speaking participants are receiving adequate instructions. Two of these participants reported a desire for more detailed and clearer instruction.

In conclusion, the findings from this evaluation demonstrate the PMSC is currently implementing an effective PA program. Through direct observations and semi structured interviews it was found that physical improvements or maintenance of physical function was experienced by all participants, the PA program minimized the risk of disease/disability for those experiencing chronic health conditions, continued engagement in life was accomplished through the development of social relationships and the ability to remain productive. Though not reported

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by most participants, some found the PA programs contributed to their intellectual and spiritual development and, and one reported learning from other cultures as a result of the class. These findings are in close alignment with the Successful Aging Model and are similar to findings from other evaluations conducted on PA programs by other organizations. There are areas in which the PMSC can strengthen their program to be more effective for their members. Areas for improvement include minor changes to the SAIL and yoga classes, implemented field testing, and collaboration between other PMSC wellness programs and the PA program.

The mission of PMSC is to make each day better, safer, healthier and to promote independence for older adults (Pike Market Senior Center, 2014) and the PA programs offered to the members are just two ways in which the PMSC is fulfilling this mission. This project has contributed the field of public health and the field of community health nursing by demonstrating the effectiveness of a PA program designed to be available to older adults of all income levels. This study provides information concerning PA programs aimed at low SES older adults, an area of public health research requiring further investigation. It is the hope of the PI that this project be of benefit to the PMSC members as well as other senior centers implementing PA programs for low SES older adults.

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Appendices

Appendix A- Wellness/Engagement Strategy Grid

Wellness/Engagement Strategy Grid

Strategy Statement:
The National Council of Aging's definition of a senior center is:
 "A community focal point on aging where older persons, as in individuals or in groups, come together for services and activities that enhance their dignity, support their independence and encourage their involvement in and with the community"

The Wellness/Engagement Program of the Pike Market Senior Center, in accordance with the above definition, offers activities that provide recreational and social stimulation, educational and intellectual stimulation, physical exercise and artistic and cultural development. Participation in these activities assists in preventing social isolation, diminishment of cognitive and physical abilities.

When engaged, even if only incrementally, in the activities of the senior center, members will experience an increase in physical well-being and social connection, leading to the fulfillment of the mission of the senior center to "address the needs of older, low-income people that are the result of physical disability, social isolation, inadequate nutrition and lack of opportunity to engage in meaningful activity or learn new skills" (Pike Market Senior Center mission statement)

This monthly report tracks the Wellness/Engagement activities and the benefits derived from participation in these activities.

Activity	Physical benefit	Social benefit	Intellectual Stimulation	Artistic/cultural Development	Spiritual Development
Social and Line Dancing	Balance, muscle strengthening, increase of stamina, and aerobic exercise	Opportunity to converse, share a common experience	Listening to and following directions, helps to maintaining or improving cognitive functioning	Learning ethnic dances, increase in cultural awareness. Participants are from diverse backgrounds	Interactions and enjoyment of a common experience result in increased satisfaction with life. Exercise reduces stress, leads to feelings of well-being.
Art with Les	Assists in maintaining cognitive functioning, fine motor-skills and eye hand coordination,	Opportunity to converse, share a common experience.	Same	Learning about various artistic mediums, development of artistic abilities and talents. Participants are from diverse	Draws upon and develops the participant's imagination and creativity. Opportunity for participant to

Activity	Physical benefit	Social benefit	Intellectual Stimulation	Artistic/cultural Development	Spiritual Development
Threads Plus	Same as above	Same as above	Learning from others in this self-maintained group assists in maintaining or improving cognitive functioning.	Learning about various sewing and handcraft and art techniques. Participants from diverse backgrounds	Same as above
Bingo	Same as above	Same as above + enjoyment of winning.	Improving and maintaining cognitive functioning	Participants are from diverse backgrounds	Enjoyment leads to increased feelings of well-being.
Birthday Party (other parties or large gatherings)	Walking or taking bus to birthday party increases daily exercise level	Opportunity to interact and converse with a large group of people.	Social conversations and interactions improve and maintain cognitive functioning.	Participants are from diverse backgrounds. Music offers opportunity to develop artistic interests.	Social Interactions and enjoyment of a common experience result in increased satisfaction with life
S.A.I.L. Stay Active and Independent for Life	Fall prevention through strength and balance training.	Exercising in a social setting provides opportunity to interact with others	Listening to and following directions, helps to maintaining or improving cognitive functioning	Participants are from diverse backgrounds	Exercise reduces stress, leads to feelings of well-being, increased mindfulness and body awareness
.Martial Arts	Body strengthening Learn focus techniques Improve body alignment.	Same as above	.same as above	Same as above	Same as above
.Yoga	Improve mind-body connection, release stress, deep muscle stretching and improved breathing.	Same as above	Same as above	Same as above	Same as above
Meditation and stress management	Release tension, improve breathing, learning to focus	Same as above	Same as above, plus a relaxed mind is more receptive to	Same as above	Same as above

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Appendix B- Code Book

Code Themes (Elo & Kyngas, 2007)	
Main Theme	Subtheme
<p>Avoiding Disease and Disability A preventative approach to delaying the onset or severity of disease or disability, (Rowe & Kahn, 1998, p 98).</p>	<ul style="list-style-type: none"> • Weight loss • Diet • Fall prevention • Surgical intervention • physical activity • Disease prevention • Disease management • Reduced Stress
<p>Physical Function The ability to do basic physical actions such as walking, climbing stairs, bending and reaching (Jones & Rose, 2005; Rowe & Kahn, 1998)</p>	<ul style="list-style-type: none"> • Activity of daily living • Balance • Breathing • Strength • Independence • Physical benefit
<p>Cognitive Function A combination of skills including memory, attention, learning, goal setting, decision making, and problem solving (Jones & Rose 2005).</p>	<ul style="list-style-type: none"> • Activity of daily living • Concentration • Independence • Intellectual benefit • Mental function • Problem solving • Thought process
<p>Engagement with Life The combination of being an active member of a community both receiving and giving social support and participating in productive activity (Rowe & Kahn, 1998)</p>	<ul style="list-style-type: none"> • Socio- emotional support <ul style="list-style-type: none"> • Sense of being valued • Relating to others • Friendship • Interactions with others • Continuing Productive Activity <ul style="list-style-type: none"> • Work
<p>Spiritual Benefit Spirituality is the personal quest for understanding answers to ultimate questions about life, about meaning, and about relationship to the sacred or transcendent, which may (or may not) lead to or arise from the development of religious rituals and the formation of community (Koenig et al., 2000, p. 18)</p>	<ul style="list-style-type: none"> • Body awareness • mindfulness • reduced stressed • Wellness • Transcendent
<p>Cultural Benefit Culture is a set of beliefs, knowledge, morals, customs, and etiquette, shaped by shared experiences, shared by a group of people used to govern their behavior and habits (Singer, 2012). Cultural benefit is the sharing of these ideas and customs between SAIL and yoga class participants.</p>	<ul style="list-style-type: none"> • Cultural awareness • Cultural sensitivity • Shared belief

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<p>Most Enjoyed Element (Participants report of their most enjoyed activity during the SAIL or Yoga class)</p>	<ul style="list-style-type: none"> • Time of day • Social activity • Physical activity
<p>Interaction with Others (Participants report of their interactions with other people present during the SAIL or yoga class)</p>	<ul style="list-style-type: none"> • Interactions with instructor • Interactions with other students
<p>Suggestions (Participants report of suggestions they have to improve the SAIL or Yoga class)</p>	<ul style="list-style-type: none"> • Remain the same • Change • Classroom Design • Classroom size • Music • time of day • Frequency • Difficulty level

Evaluation of Physical Activity Programs

Appendix C- Observation Tool

Class Date:	SAIL	Yoga
-------------	------	------

Student	gender	Race	Interaction with another student/s	Interaction with instructor	Other
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Observations of Instructor:
Class activities:
<p>SAIL Fidelity Notes:</p> <ul style="list-style-type: none"> *Perform all mandatory exercises as outlined in SAIL Training Manual *Use of weights to develop strength / or for strength?? *3 hours of class instruction once a week. <p>The U.S. Department of Health and Human Services Notes:</p> <ul style="list-style-type: none"> *150 minutes a week of moderate-intensity *75 minutes per week of vigorous-intensity aerobic physical activity *or an equivalent combination of moderate- and vigorous-intensity aerobic activity

Evaluation of Physical Activity Programs

Appendix D- SAIL Instruction Manual Class Evaluation Worksheet



Class Evaluation Worksheet

Day and Time of Class Visited: _____ Class Instructor: _____

Location: _____

Components	Pass	Needs Improvement	Comments
Physical Set-up			
Instruction Safety			
Warm Up			
Aerobic Exercises			
Balance/Cool Down			
Strength Training			
Flexibility/Stretching			
Education			

Evaluation Summary completed by: _____

Physical Set Up

Pass	NI	Category	Comments
		Safety/Risk Management	
		Space must be clear of obstructions such as columns or posts, stairs, tables and chairs (other than those being used) that participants might run into or trip over	
		Floor surface: clean (no sand, dust bunnies, spills), no slippery wax that might cause someone to slip	
		First aid kit available	
		Accident/Incident Report forms available on site (knowledge of site protocols)	
		Space	
		Participants must be able to stand with arms extended out to the sides and not touch fingertips (360 degrees)	
		Good acoustics, no echo	
		No other activities scheduled at same time	
		Lighting	
		Well lit room	
		No glaring lights or back lighting that obstruct vision	
		Flooring	
		Wood or tile floor (carpet not recommended)	
		Temperature	
		Comfortable for the level of activity (68–72 degrees for regular class, 65–68 degrees for an advanced class)	

Evaluation of Physical Activity Programs

Physical Set Up (continued)

Pass	NI	Category	Comments
		Chairs	
		Sturdy, straight-backed, stackable, armless chairs. No crossbar between the front legs of the chair	
		No slope or significant curve to the seat	
		Chairs with arms available for very frail individuals or Level 1 classes	
		Weights	
		Enough weight cuffs for all participants to have a pair, with extra available to challenge them as they improve	
		Weights must be adjustable, easy to adjust and easy to put on	
		All cuffs in good condition, no holes	

Physical Set Up Scoring: *(check one)*

Pass Needs Improvement

Instruction Safety

Pass	NI	Category	Comments
		Visibility	
		Must have a clear, unobstructed view of the entire class	
		Set Up and Space	
		Space is clear of moveable objects, such as tables and chairs (other than those being used) that people might run into or trip over	
		All activities are done indoors; no outside activity	
		Verbal Cueing	
		Instructor cues safe exercise behavior (such as "If it hurts, don't do it," "If you have pain, stop," "Work at your own pace," "Listen to your body")	
		Monitoring	
		Unsteady people are seated or standing near a chair or assistive device at all times to reduce their risk for falls	
		Adapting for People with Special Needs	
		Exercises modified to avoid pain (light or no weight, reduced range or motion) as needed	
		Standing exercises substituted for walking exercises, as needed	
		Seated version of exercises demonstrated, as needed	
		A less intense version of exercises taught to participants who cannot keep up, if needed	

Instructor Safety Scoring: *(check one)*

Pass Needs Improvement

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Warm Up

Pass	NI	Category	Comments
		Duration	
		Range 3–5 minutes	
		Pacing/Intensity	
		Light intensity (9 –11 on Borg Scale)	
		Gradually increase intensity in the last 2 minutes of warm up (from 9 to about 11)	
		Music	
		Music appropriate to fitness level of class (at least 75% of participants can keep up)	
		Range 108–124 beats per minute	
		Verbal Cueing	
		Instructions are clear and audible	
		Content	
		Movement of all major body parts: upper extremities, lower extremities, neck and trunk	
		Gradually increase both amplitude and speed of movements through warm up	

Warm Up Scoring: (check one)

_____ Pass _____ Needs Improvement

Aerobics

Pass	NI	Category	Comments
		Duration	
		18–20 minutes (May be less depending on ability of group. If less than 18 minutes, instructor should have a plan to gradually increase time.)	
		Pacing/Intensity	
		12–13 on the Borg scale	
		Class level appropriate to at least 75% of class participants	
		A less intense version taught to participants who cannot keep up	
		Intensity is monitored at least once to ensure that people are working at an appropriate level	
		Type of intensity monitoring used: <input type="checkbox"/> Heart Rate <input type="checkbox"/> BORG Scale <input type="checkbox"/> TalkTest	
		Music	
		Appropriate to class level. Range: 120–135 beats per minute	
		Verbal Cueing	
		Water breaks as needed	
		Reminders about breathing	
		Instructions are clear and audible	

Evaluation of Physical Activity Programs

Aerobics (continued)

Pass	NI	Category	Comments
		Content	
		Majority of participants able to follow movements	
		Continuous movement (not a lot of stop/starts)	
		Engage major muscle groups	
		No weights during aerobics	
		Low impact—no jumping or leaping	

Aerobics Scoring: (check one)

Pass Needs Improvement

Balance/Cool Down

Pass	NI	Category	Comments
		Duration	
		10 minutes	
		Pacing/Intensity	
		Light intensity: 9–11 on Borg Scale	
		Music	
		Music appropriate to fitness level of class (at least 75% of participants can keep up)	
		Range: 108–124 beats per minute	
		Verbal Cueing	
		Instructions on how to increase or decrease balance challenge (such as no hands or piano fingers vs. firm hand hold if needed for support)	
		Content – includes the following mandatory exercises	
		Dynamic Balance Drills	
		Walk slowly with head turns	
		Walking and stepping over "obstacles"	
		Heel-toe walk, forwards and backwards	
		Turn circle X1 in each direction	
		Sit-to-stand for 30 seconds	

Balance/Cool Down (continued)

Pass	NI	Category	Comments
		Static Balance Drills	
		Clock sway	
		Head turns and trunk turns	
		Heel-to-toe stand (Romberg)	
		Reaches (forwards and to each side)	
		Stand on one leg	

Balance/Cool Down Scoring: (check one)

Pass Needs Improvement

Evaluation of Physical Activity Programs

Strength Training

Pass	NI	Category	Comments
		Duration	
		10 minutes	
		Pacing/Intensity	
		Light intensity: 9–11 on Borg Scale	
		Music	
		Music appropriate to fitness level of class (at least 75% of participants can keep up)	
		Range: 108–124 beats per minute	
		Verbal Cueing	
		Instructions on how to increase or decrease balance challenge (such as no hands or piano fingers vs. firm hand hold if needed for support)	
		Content – includes the following mandatory exercises	
		Dynamic Balance Drills	
		Walk slowly with head turns	
		Walking and stepping over "obstacles"	
		Heel-toe walk, forwards and backwards	
		Turn circle X1 in each direction	
		Sit-to-stand for 30 seconds	

Strength Training (continued)

Pass	NI	Category	Comments
		Static Balance Drills	
		Clock sway	
		Head turns and trunk turns	
		Heel-to-toe stand (Romberg)	
		Reaches (forwards and to each side)	
		Stand on one leg	

Strength Training Scoring: *(check one)*

Pass Needs Improvement

Evaluation of Physical Activity Programs

Flexibility/Stretching/Education

Pass	NI	Category	Comments
		Duration	
		8–10 minutes	
		Pacing/Intensity	
		Light intensity: 10–11 on Borg Scale	
		Education	
		Discuss one bullet point from the SAIL Guide	
		Verbal Cueing	
		Breathing	
		Correct posture	
		Content – minimum: each mandatory stretch below held for 20–30 seconds	
		Upper Body	
		Neck stretches	
		Shoulder rotations	
		Scratch between shoulder blades	
		Scapula protraction (clasp hands in front)	
		"Praying" position for wrists	

Flexibility/Stretching/Education (continued)

Pass	NI	Category	Comments
		Lower Body	
		Quadriceps Stretch	
		Hamstring Stretch	
		Inner Thigh Stretch	
		Calf Stretch	

Flexibility/Stretching/Education Scoring: *(check one)*

____ Pass ____ Needs Improvement

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Appendix F- Interview Tool

Date	Subject #	Code Name	Gender	year of birth	Race	

1. A: Have you taken the SAIL Class? Yes No
 B: Have you taken the yoga class? Yes No

2. A: When did you start taking the SAIL Class?
 B: When did you start taking the Yoga Class?

3. A: How often do you come to the SAIL class?
 B: How often do you come to the Yoga class?

4. A: How would you rate your overall satisfaction with the SAIL class?

Not at all Satisfied	Slightly Satisfied	Somewhat Satisfied	Very satisfied	Completely Satisfied
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- B: How would you rate your overall satisfaction with the Yoga class?

Not at all Satisfied	Slightly Satisfied	Somewhat Satisfied	Very satisfied	Completely Satisfied
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5. A: Why did you decided to take the SAIL class?

- B: Why did you decide to take the Yoga Class?

6. A: Please describe your experience in the SAIL class.

probes
 tell me more about your experience:
 interacting with the teacher
 interacting with other students
 feeling about the exercises or difficulty level

- B: Please describe your experience in the Yoga class.

probes
 tell me more about your experience:
 interacting with the teacher
 interacting with other students
 feeling about the exercises or difficulty level

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7. A: Describe ways in which the SAIL class has impacted your life?

Probes

Tell me more about:

physical changes you have experienced as a result of the class

emotional changes you have experienced as a result of the class

intellectual/cognitive changes you have experienced as a result of the class.

spiritual development which has occurred as a result of the class

B: Describe ways in which the Yoga class has impacted your life?

Probes

Tell me more about:

physical changes you have experienced as a result of the class

emotional changes you have experienced as a result of the class

intellectual/cognitive changes you have experienced as a result of the class.

spiritual development which has occurred as a result of the class

8. A: What do you like best about the SAIL class?

B: What do you like best about the yoga class?

9. A: What would you like to see change in the SAIL class?

B: What would you like to see change in the yoga class?

10. Do you have any further questions or comments you would like to make?

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Appendix G- Demographics

2015 SAIL and Yoga class participant Demographics (PMSC, 2015)		
Total participants	SAIL (n) 36	Yoga (n) 40
Total visits	SAIL 1043	Yoga 1006

2015 SAIL Class participant Demographics (PMSC, 2015)					
Gender		Race		Age	
Male	11	Latino	2	55-64	8
Female	25	Black	4	65-74	17
		Asian	12	75- 84	11
		White	18	85 +	0
		Other	0		

2015 Yoga Class participant Demographics (PMSC, 2015)					
Gender		Race		Age	
Male	10	Latino	1	55-64	9
Female	30	Black	1	65-74	24
		Asian	19	75- 84	7
		White	19	85 +	0
		Other	0		

Demographics for Observed SAIL Classes			
SAIL Class	Number of participants	Gender	Race
1	12	Male- 3 Female- 9	Latino-0 Black-0 Asian- 5 White- 7

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2	6	Male- 1 Female- 5	Latino-0 Black-0 Asian- 1 White- 5
3	7	Male-2 Female-5	Latino-0 Black-0 Asian- 1 White- 6
4	11	Male-3 Female- 8	Latino-0 Black-0 Asian- 3 White- 8
5	9	Male- 3 Female- 6	Latino-0 Black-0 Asian- 4 White - 6
6	6	Male-2 Female- 4	Latino-0 Black- 1 Asian- 1 White- 4
7	6	Male- 1 Female- 5	Latino-0 Black-0 Asian- 1 White- 5
8	5	Male- 2 Female-	Latino-0 Black-0 Asian- 1 White- 4
9	7	Male- 2 Female- 5	Latino-0 Black-0 Asian- 2 White- 5
10	4	Male- 1 Female- 5	Latino-0 Black-0 Asian- 2 White- 2

Demographics for Observed Yoga Classes			
Yoga Class	Number of participants	Gender	Race
1	11	Male- 2 Female- 9	Latino-0 Black-0 Asian- 7 White- 4
2	5	Male- 2 Female- 3	Latino-0 Black-0

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			Asian- 3 White- 2
3	8	Male- 2 Female- 6	Latino-0 Black-1 Asian- 4 White- 3
4	8	Male- 1 Female- 7	Latino-0 Black-0 Asian- 4 White- 4
5	9	Male- 2 Female-7	Latino-0 Black- 1 Asian- 5 White- 3
6	9	Male- 2 Female- 7	Latino-0 Black-0 Asian- 3 White-9
7	8	Male- 1 Female- 6	Latino-0 Black-0 Asian- 4 White- 6
8	9	Male-1 Female- 10	Latino-0 Black-0 Asian- 3 White- 6
9	8	Male-1 Female-7	Latino-0 Black-0 Asian- 5 White- 6
10	6	Male-0 Women- 6	Latino-0 Black-0 Asian- 1 White- 5

Demographics of Semi Structured Interview Participants					
(n)	Gender	Year of birth	Race	Class taken: SAIL Class	Class Taken: Yoga Class
15	Male- 4 Female-11	Average- 1947 Range- 1938-1952	Latino-0 Black-1 Asian- 4 White-9	Yes- 9 No- 4 Tried- 1	Yes- 11 No- 1 Tried- 3

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Appendix H- Frequency of Class Attendance

Frequency of class attendance	SAIL	Yoga
Tried the class	3	2
Occasional (less than once per week)	1	3
One class per week	1	1
Two classes per week	3	3
Three Classes per week	5	4

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Appendix I- SAIL Fidelity Guidelines and Findings

Fidelity Guidelines	Findings adhering to the Fidelity Guidelines	Findings not adhering to the Fidelity Guidelines
SAIL Program Leader are trained in the SAIL Program through the online course or have attended a SAIL program training	<ul style="list-style-type: none"> • The instructor has completed SAIL training 	
Classes perform all mandatory elements as outlined in SAIL Instruction Manual (see Table 13)	<ul style="list-style-type: none"> • 4 minutes of warm up exercises are done • 10 minutes of balance exercises are done • All strength exercises are done and 25 minutes of strength exercise is done. • 10 minutes of stretching are done 	<ul style="list-style-type: none"> • Aerobic exercise is 10 minutes long • No educational topic is being taught
The use of weights to develop strength/or for strength is included	<ul style="list-style-type: none"> • Dumbbells weight exercises are done for 15 minutes during each class • Ankle cuff weight exercises are done for 10 minutes during each class 	
3 hours of class instruction are conducted once a week or 2 hours can be done in class with one hour at home if needed	<ul style="list-style-type: none"> • Classes meet M-W-F three weeks/month 	<ul style="list-style-type: none"> • The first week of the month classes are held twice in the week. • Each class is 50 minutes

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Appendix J- Mandatory SAIL Class Elements

Mandatory Element	Findings adhering to Mandatory elements	Findings not adhering to Mandatory elements
1. Warmup • 3-5 minutes	<ul style="list-style-type: none"> • done for 3-5 Minutes • Some participants come early to have extended warm up time • Walking • Arm circles • Hip rotations 	
2. Aerobic Exercise • 18–20 minutes	<ul style="list-style-type: none"> • Toe touch • Lunges • Side step 	<ul style="list-style-type: none"> • Done for 10 minutes
3. Balance • 10 minutes	<ul style="list-style-type: none"> • Done for 10 minutes • Walk slowly with head turns • Sit to stand for 30 seconds • (by chair) Turn circle x1 each direction • Shifting weight (feet close together) • Twisting side to side • Heel to toe stand • Reaching forward and sideways • Single leg stand 	<ul style="list-style-type: none"> • Walk and step over “obstacles” • Heel to toe walk backward • Heel to toe walk forward
4. Strength • 15–18 minutes	Upper body <ul style="list-style-type: none"> • Bicep curl • Triceps extension • Arm raise to side • Arm raise to front • Overhead press • Seated crunches Lower Body <ul style="list-style-type: none"> • Knee flexion • Knee extension • Hip flexion • Hip extension • Side leg raise • Plantar flexion 	<ul style="list-style-type: none"> • Done for 25 minutes
5. Stretching • 8-10 minutes • Hold each stretch for 20-30 seconds	<ul style="list-style-type: none"> • Done for 8-10 minutes • Neck: side to side; flexion and extension • Shoulders • Wrist praying position • quadriceps • Hamstrings • Inner thigh • Calves 	<ul style="list-style-type: none"> • Hand: fist and fling
6. Education		<ul style="list-style-type: none"> • One Educational Topic each class from the SAIL: An Information Guide for Adults 65+ booklet

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Appendix K- Human Subjects Letter

November 24, 2015

PI: Ms. Christine Dostal,
Health Services / Community Health

Re: Exempt Status Application, HSD #50834
"Impact Evaluation of the Physical Activity Programs Taking Place at The Pike Market Senior Center"

Dear Ms. Dostal,

The Human Subjects Division received the above-named Exempt Status Application on November 19, 2015. This application has been reviewed by Subcommittee EJ. As the application describes, this activity involves an evaluation of the yoga and Stay Active and Independent For Life (SAIL) programs offered by the Pike Market Senior Center. You have confirmed that:

1. The questions you hope to answer in this program impact evaluation are:

- a) Are the physical activities programs offered at Pike Market Senior Center consistent with current recommendations found in literature?
- b) Do the participants in the physical activity programs at the Pike Market Senior Center feel that the classes promote healthy aging?
- c) Are the physical activity classes meeting the Pike Market Senior Center's objectives for the program?

Based on this information and the definition of "research" under 45 CFR 46.102(d), the UW Human Subjects Division has determined that this activity does not meet the federal definition of "research." This determination means that the activity is not subject to 45 CFR 46 and does not require review by the IRB. Please keep a copy of this letter for your records.

If you have further questions or concerns, feel free to contact me.

Best regards,

Kristen Wittmann
Human Subjects Review Administrator
Committee J
(206) 221-2093
kmw89@uw.edu

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Appendix L- Memorandum of Understanding

MEMORADUM OF UNDERSTANDING BETWEEN THE PIKE MARKET SENIOR CENTER,
UNIVERSITY OF WASHINGTON SCHOOL OF NURSING, AND CHRISTINE DOSTAL, UW
MASTER OF NURSING STUDENT/MASTER OF PUBLIC HEALTH STUDENT

This Memorandum of Understanding (MOU) is executed between the Pike Market Senior, the University of Washington School of Nursing, and Christine Dostal, University of Washington Master of Community Nursing Student, (collectively the Parties) to provide the roles and responsibilities related to an MN/MPH Thesis entitled; Evaluation of Physical Activity Programs Taking Place at The Pike Market Senior Center.

The purpose of this thesis is to conduct a program evaluation of the SAIL and yoga classes offered by the Senior Center with the goal of using these findings to assist the Senior Center to improve their physical activity programs. The Senior Center is interested in understanding ways in which the physical activity programs are meeting the program's' objectives. This will be done through a literature review, interviews, focus groups, observations, and data analysis of walking group recruitment and retention. Findings are expected to be of value to the Pike Market Senior Center in enhancing its effort to address healthful aging through physical activity and to advance the science of community health nursing.

CHRISTINE DOSTAL'S ON-SITE ACTIVITIES

The Parties agree that Christine Dostal shall:

1. Observe the physical activity programs, SAIL and yoga, and collect data on the adherence to US department of Health and Human Services recommendations on physical activity for older adults and adherence to the SAIL Instruction Manual fidelity guidelines.
2. Conduct interview with 20 participants of the SAIL and/or yoga classes concerning the effects these classes have had on their lives and healthful aging.
3. Not disclose personal identifiers about anyone involved in the interviews or observations.
4. Submit the final thesis report and any related materials to the Pike Market Senior Center

RECRUITMENT AND RETENTION STRATEGIES

1. Work through established channels (i.e., by working closely with Zoe Freeman and Rhonda Allison for interview referrals, and informing them of all intended activities as the project proceeds).

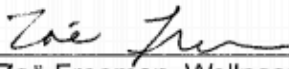
Evaluation of Physical Activity Programs

2. Christine Dostal will be available by email and phone to answer any questions or concerns of participants and the Pike Market Senior Center throughout the duration of this thesis project.

INTELLECTUAL PROPERTY RIGHTS


It is agreed that the products of the student's work will be "co-owned" by Christine Dostal and the Pike Market Senior Center, and any time Christine Dostal wishes to use the products of this work other than in an academic setting, she must present her proposal to do so to the Pike Market Senior Center and then adhere to their final decision on its use. It is agreed that where any written or oral communication concerning this thesis (including the final report, abstract, and publication or oral presentation of any aspect of the study), the following guidelines will be followed:

1. Christine Dostal may refer to the agency as the Pike Market Senior Center in academic settings via written or in presentations.
2. If Christine Dostal decides to professionally publish or present, she will need to ask for permission first from the Pike Market Senior Center.
3. Restrictions in discussion of thesis details will be determined by the Pike Market Senior Center, and will be adhered to by Christine Dostal.



Zoë Freeman, Wellness-Engagement Coordinator


6/2/16
Date



Christine Dostal UW MN/MPH Student

6/3/16
Date

I verify that the scope of work in this proposal has been approved by Christine Dostal's thesis committee



Noel Chrisman, Ph.D., MPH committee chair

6/7/16
Date

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Appendix M- Consent Form

CONSENT FORM FOR: (participant's name) _____

RESEARCH TITLE: Impact Evaluation of the Physical Activity Programs conducted at The Pike Market Senior Center

RESEARCHER: Christine Dostal MPH/MN Candidate, University of Washington

- I have been given information about the Impact Evaluation of the Physical Activity Programs conducted at The Pike Market Senior Center and discussed the research project with Christine Dostal who is conducting this research as part of a Master of Public Health and Master of Nursing program at the University of Washington.
- I have been advised of the potential risks and burdens associated with this research, which include loss of time and emotional strain from the interview process. I have had an opportunity to ask Christine Dostal any questions I may have about the research and my participation.
- I understand that my participation in this research is voluntary, I am free to refuse to participate and I am free to withdraw from the research at any time. My refusal to participate or withdrawal of consent will not affect my treatment in any way /my relationship with the Pike Market Senior Center. If I have any enquiries about the research, I can contact Christine Dostal, Zoe Freeman, Rhonda Allison or Noel Chrisman.

By signing below I am indicating my consent to (please tick):

_____ Recall memories of my experience in the yoga and/or SAIL classes and answer a few questions.

_____ I understand the study will take approximately 15 minutes for me to complete but if I would like more time an hour is available.

_____ I understand that the data collected from my participation will be used for purpose of a graduate thesis and publication, and I consent for it to be used in that manner.

Signed _____

Date ____/____/____

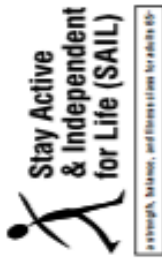
Name (please print) _____

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Appendix N- U.S Department of Health and Human Services Recommendations and Findings

USDHHS PA recommendations	Findings in adherence to the recommendations	Finding not in adherence to the recommendations
<p>For substantial health benefits, older adults should do at least 150 minutes a week of moderate-intensity, or 75 minutes a week of vigorous-intensity aerobic physical activity, or an equivalent combination.</p>	<p>SAIL Class</p> <ul style="list-style-type: none"> • 50 minutes per class • Class meets three days per week three weeks/month • Class meets two days per week the first week of the month • Vigorous activity <p>Yoga Class</p> <ul style="list-style-type: none"> • 60 minutes per class • Class meets three days per week three weeks/month • Class meets two days per week the first week of the month • Moderate and Vigorous activity 	<ul style="list-style-type: none"> • For those who do not participate in at least two classes per week it is unknown if they are meeting this recommendation
<p>Older adults should also do muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on 2 or more days a week.</p>	<p>SAIL Class</p> <ul style="list-style-type: none"> • Barbells weights are used for 15 minutes per class • Ankle cuff weights are used for 10 minutes per class <p>Yoga Class</p> <ul style="list-style-type: none"> • Muscle- strengthening exercises are performed for 30 minutes per class 	<ul style="list-style-type: none"> • For those who do not participate in at least two classes per week it is unknown if they are meeting this recommendation
<p>Aerobic activity should be performed in episodes of at least 10 minutes, and preferably, it should be spread throughout the week.</p>	<ul style="list-style-type: none"> • SAIL Class • Aerobic activity is performed for 20 minutes of each SAIL class 	<ul style="list-style-type: none"> • The yoga class offered at the PMSC does not include aerobic activity
<p>Older adults should do exercises that maintain or improve balance if they are at risk of falling.</p>	<p>SAIL Class</p> <ul style="list-style-type: none"> • Specific exercises are done to improve balance <p>Yoga</p> <ul style="list-style-type: none"> • Poses are done to improve core strength and balance in each yoga class 	

Appendix O- Outline of Mandatory Elements and Exercises found in the SAIL Instruction Manual



SAIL Class Checklist

All participants have:

- Completed Participant Registration form
- Copy of *SAIL: An Information Guide for Adults 65+*
- Adjustable cuff weights under their chair
- Bottle of water under their chair

1. WARM UP (3–5 minutes)

Slow pace music (approximately 115 bpm.) Examples:

- * march in place
- * knee lifts
- * side steps right and left
- * heel tap
- * toe tap: front, back and side
- * hamstring curl
- * walk around edge of room
- * squats over chair
- * shoulder shrugs
- * shoulder rolls
- * neck exercises

2. AEROBICS (18–20 minutes)

Faster music (approximately 125 bpm.) Examples:

- * walk fast around edge of room
 - * step-to-ouch: include arm swings
 - * knee raise: touch with elbow
 - * step-kick: include arms
 - * walking backwards/forwards with arm movement
- Examples using a ball:
- * throw and catch standing still
 - * throw and catch walking up and down
 - * bounce standing still
 - * bounce against wall
 - * bounce standing on one leg
 - * bounce walking around a circle

3. BALANCE-COOL DOWN (10 minutes)

Slow pace music (approximately 115 bpm.)

Dynamic Balance

- Walk slowly with head turns
- Walk and step over “obstacles”
- Heel to toe walk, forward and back (by chair) Turn circle x1 each direction
- Sit to stand for 30 seconds

Static Balance

- Shifting weight (feet close together)
- Twisting side to side
- Heel to toe stand
- Reaching forward and sideways
- Single leg stance

4. STRENGTH (15–18 minutes)

Upper Body

- Bicep curl
- Triceps extension
- Arm raise to side
- Arm raise to front
- Overhead press
- Seated crunches

Lower Body

- Knee flexion
- Knee extension
- Hip flexion
- Hip extension
- Side leg raise
- Plantar flexion (toe stand)

5. STRETCHING (8–10 minutes)

Hold each stretch 20–30 seconds.

Upper Body

- Neck: side to side; flexion and extension
- Shoulders: arm circles; scratch between shoulder blades
- Shoulders and upper back: clasp hands behind head
- Wrist: “praying” position
- Hand: “fist and fling”

Lower Body

- Quadriceps
- Hamstrings
- Inner thigh
- Calves

6. EDUCATION

One educational topic each class from *SAIL: An Information Guide for Adults 65+*.

These activities are mandatory.

* These activities are suggestions

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Appendix P- Classes taken by interview participants

Have you taken the SAIL class?	Have you taken the yoga class?	Answered yes to taking both classes
SAIL	Yoga	5
Yes- 9	Yes- 11	
No- 4	No-1	
Tried- 1	Tried-3	

Appendix Q- Semi Structured Interview Answers Organized by Question

Question 1: A: Have you taken the SAIL Class? B: Have you taken the yoga class?

In the first question participants were asked if they had taken the SAIL class and if they had taken the Yoga class. 9 participants reported they had taken the SAIL class, 11 participants reported they had taken the yoga class, 4 participants reported they had not taken the SAIL class, one participant reported they had not taken the yoga class, one participant reported they had tried the SAIL class once and three participants reported they had tried the yoga class once (See Table 14). Five participants reported they had taken both the SAIL and yoga class more than once. When discussing with Participant Five, who had tried the SAIL class but had not continued, she reported, “ [I took] the SAIL class briefly, it was too early to get up”. When discussing with the participants who had tried the yoga class but had not continued all reported the class was too difficult for them. Participant One stated “Yes, I have taken the yoga class but it is too hard, too difficult” and Participant Three stated “ [The instructor] told me that I am not strong enough as half way through the yoga class I got dizzy”.

Have you taken the SAIL class?	Have you taken the yoga class?
Yes- 9	Yes- 11
No- 4	No-1
Tried- 1	Tried-3

Question 2:

A: When did you start taking the SAIL Class?

Those who had taken the SAIL class were asked when they started taking the class. The most recent start time was October of 2015 and the longest reported start time was 2009. Some participants reported their start time by year and others reported their start time by how many years ago they started. Findings are reported in the terminology used by the participants. Three participants reported starting the SAIL class around one year prior to participating in this study, one participant reported starting the class five years ago, and one participant reported starting the class six years ago. Two participants reported not remembering when they started the class but thinking it was “a couple” of years ago.

B: When did you start taking the Yoga Class?

Those who had taken the yoga class were asked when they started taking the class. Some participants reported their start dates by year and others reported their start time by how many years ago they started. Findings are reported in the terminology used by the participants. The most recent start time was one year prior to participating in this study and the longest reported start time was 2007. Two participants reported starting the yoga class one year ago, two participants reported starting the yoga class two years ago, one participant reported starting the yoga class four years ago, two participants reported starting the yoga class six years ago, one participant reported starting the yoga class seven years ago, and four participants reported their start years as 2007, 2006, 2011, and 2012.

Question 3:

A: How often do you come to the SAIL class?

participants who have taken the SAIL class were asked how often they come to to this class. Answers varied from “tried it once” to “three times per week” (See Table 10 for frequency of attendance) One participant reported coming to the class once per week. She expressed interest in coming more often but she is has a full schedule the remainder of the week, “Well right now it is just Mondays. I have other things on the other days scheduled in”. The person who reported the highest attendance stated “I come 90% of the time, Well I might take one day off a month”. Of those who come to both the SAIL and yoga class one person reported an alternating schedule between the two classes “And what, I do because I can't take two hours every time, I take SAIL twice a week and Yoga once a week. So I do SAIL Monday and Friday, Yoga on Wednesday.”

B: How often do you come to the Yoga class?

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Participants who have taken the yoga class were asked how often they come to this class. Similarly to the SAIL class, answers varied from “tried it once” to “three times per week” (See Table 10 for frequency of attendance).

Question 4: Satisfaction Scores

Semi structured interview participants were asked to rate their overall satisfaction with the SAIL class and their overall satisfaction with the yoga class. People were asked to rate their satisfaction score with the SAIL or yoga class if they had taken the class at least once. Of the 12 participants who have taken or are taking the SAIL class zero participants reported being not at all satisfied, zero participants reported being slightly satisfied, two participants reported being somewhat satisfied, four reported being very satisfied, and six reported being completely satisfied. For the yoga class zero participants reported being not at all satisfied, one reported being slightly satisfied, one reported being somewhat satisfied, four participants reported being very satisfied and six reported being completely satisfied. For the SAIL class these answers resulted in an average satisfaction score of 4.1 and a mean score of 4. For the Yoga class these answers resulted in an average satisfaction score of 4.5 and an mean score of 5.

Satisfaction Scores.					
SAIL	Numeric value	# of subjects	Yoga	Numeric value	# of subjects
Not at all	1	0	Not at all	1	0
Slightly	2	0	Slightly	2	0
Some what	3	2	Some what	3	1
Very	4	3	Very	4	4
Completely	5	3	Completely	5	6

Question 5:

A: Why did you decided to take the SAIL class?

When asked why participants decided to take the SAIL class all reported some kind of physical benefit. The type of physical benefit varied; some participants were looking to manage a chronic disease, some were looking to build strength, and others hoped to maintain their physical abilities and independence. Participant One stated she took the class to recover from heart surgery, “After the PT for the heart surgery I needed an exercise class and I did not want a sit down class and so when I came here to this one, this one was perfect for me.” Participant Three reported, “I have vestibulopathy. It is an inner ear disorder of the vestibular system so I have a balance problem. So it is to strengthen my balance.” Maintaining independence was other reasons participants reported taking the SAIL class. Participant Nine reported she has been taking the SAIL class both to increase flexibility and in to be able to continue to work, “ I am stiffening up and that is not good. And another strong reason, I work in the market and I have to pull a heavy cart and I need my strength for work” People reported taking the SAIL class was an activity to fill their time. When asked why she is taking the SAIL class Participant Seven stated “Someone told me that you have to be able to get up and down from the toilet if you want to stay in your living situation and not go into assisted living. That it is very important to be able to get yourself up and down.” Being able to remain in her home living independently was important to her.

B: Why did you decided to take the yoga class?

When asked why people decided to take the yoga class all reported some kind of physical benefit. Participants also reported wanting to work on their breathing, the music in the class, and to participate in a new activity. Participant Two reported, “I got tired of being stiff”, and Participant Thirteen reported “My health improves every day because of the class. I have a heart problem but since I have taken the class it feels improved. My heart feels stronger and better”. Both Participant Eleven and Participant Fourteen stated they took yoga to improve their breathing

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stating “[I take yoga] for my health, to improve my lungs” and “[I take yoga] because I have asthma, in February and November is when I get hay fever real bad. But doing breathing and yoga, it doesn't have the same impact that it does otherwise.” Participant Three, who reported taking SAIL to help with his balance also reported, “[I take yoga] because [yoga] actually helps balance too. You do some balancing in it and I wanted to vary. Instead of doing SAIL classes three times a week I wanted to vary it and give [myself] some variety.” Participant Eight who also participates in both SAIL and yoga stated, “Because I needed to do something for my rheumatoid arthritis to keep limber. And the doctor had been at me. Once I moved here I had no excuse. So kind of the same reasons but just a new activity.” Participant Thirteen stated “I would like to get out of my house”.

Question 6:

A: Please describe your experience in the SAIL Class.

When asked to describe their experience in the SAIL class the main themes that were discussed were physical function, and interactions with others. Sub-theme discussed during this portion of the semi-structured interviews were increased strength, balance, the difficulty level of the class, interactions with the instructor, interactions with other participants, and socio-emotional support. When asked about their experience in the class some people commented on parts of the class they enjoyed or areas they saw room for improvement. This will be discussed under the suggestions section of this chapter. The most common responses when asked about their experience in the SAIL class was improved physical function. People discussed being able to do the exercises for longer, with less effort, with less pain, and with more ease. For example, Participant Four stated “I was very pleased when my hips stopped bothering me that was very nice. I have muscular hips now” Participant One stated, “Everything on the legs would get so tired and I just kept on doing them and now I can do it really easy.” Participant Three stated “It is pretty much what I expected and I have been happy with it. It has been really good for me and I think it has improved my balance.” Participant Eleven stated “For me it has been successful. I have been able to increase my strength and over the period of time that I have been in the class I have suffered an injury and setbacks. Even so I can always start in a safe place to restore and rebuild.” Participant Four stated “When I first started I had a hard time. I could not do the stand up/sit down, I think I got ten and could not do any more. Now I can do 24 without stopping.”

Another common theme discussed when asked about their experiences in the SAIL class was interactions with both the instructor and other students. Overall people reported receiving helpful feedback from the instructor, enjoyed her friendly banter during class and found her instructions effective. For example, Participant Nine stated, “I find [the instructor] to be highly qualified as a teacher of strength and balance. She is very knowledgeable of the human body and what it can and cannot do, especially for seniors.”

Finally, the next themes that were frequently discussed were interactions with other participants and socio-emotional support. When people discussed their interactions with other participants in the class all reported having positive experiences and the development of socio-emotional support was reported. For instance, Participant One stated, “I like pretty much all of [the other participants], anybody who talks. I am usually also quite talkative, I am a social person.” and Participant Nine stated “I enjoy the other people. They are very wonderful and involved people I think”. Not only do people have positive interactions during the SAIL class but some reported the SAIL class has allowed them to develop relationships outside of the class. Participant Four stated, “I know one of the ladies works down at the market and she told me where so I am going to go down and visit her.”

B: Please describe your experience in the Yoga Class.

When discussing their experience in the yoga class the most common themes discussed were suggestions and interactions with others, followed by physical function, cultural benefit, and engagement with life. Sub-theme discussed during this portion of the semi-structured interviews were, strength, stretching, cultural awareness, interactions with the instructor, interactions with other participants, socio-emotional support and difficulty level. Similarly with the SAIL class,

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suggestions were made during this section of the semi structured interview. These too will be discussed under the suggestions section.

Every person reported having a positive or enjoyable relationship with the instructor. For example, Participant Eight stated “[The instructor] is really good. She is really positive. She will tell me this way might be better or something like that. That is what I like about her”. Participant Two “[The instructor] takes it very seriously, very responsible person and Participant Five Stated She is doing a good job. She gets me sweaty, that is for sure.”

Physical function was also a theme discussed when asked this question. Participant Two stated “My energy is a lot better. I know that I am doing better than my, what do they call that, cohort, a bunch of people my own age and I am shocked they look like they are ten years older than me. The benefits are very obvious.”

Overlap was found between the interactions with other students and the development of socio-emotional support. Most people reported positive interactions with other students in the class and these positive interactions led to the development of friendships or socio-emotional support in other ways. Participant Two “The people that I take the classes with I enjoy their company” and Participant Eight reported, “[yoga] has really gotten me to make friends with people, it gets me out.”

Along with the development of supportive relationships Cultural benefit was discussed by one person when asked about her experience in the yoga class. No other people addressed culture during their interview. Participant Five “Well, I find the Vietnamese people, I find them very interesting. I like learning about their culture. And Rhonda, of course, I like her very much too. But mostly it is the Vietnamese people. Yes, [they bring] something a little bit different and I really like them.”

Finally, the difficulty level of the class was a theme discussed by most of the semi structured interview participants during this question. A mix of responses were found when discussing the difficulty level of the class. Some people found the class was the right level of difficulty for them, some found the yoga class to difficult, while others are looking for more challenging exercises. Those who found the yoga class to difficult reported trying the yoga class once. Participant Two “ Well, I never complain about the exercises we do. I know they all benefit. Some of them are more difficult but those are the ones that have the greatest benefits”. Participant Five stated “[Yoga] is just about right. It is not too hard.”

Participant Six stated, “ Rhonda is great about letting me adapt what I can do because she knows I have RA and I have trouble with my wrists and hands so I can't do some of them, like up dog and down dog and stuff like that. Participant Eight “Some of [the exercises] I like. I have trouble with some of them. I had dance when I was younger, when I was about 15 years, that is why yoga some of the moves are familiar. Participant Ten stated “I think the yoga is very good. And I think basically she keeps us in beginning yoga. We go through all of the fundamentals; the forward bends, the back bends, the twisting, triangles. We go through the whole thing. For me, it is where I always go because I know I can start and I will be okay, I will be safe, I won't get hurt. Participant Eleven stated “the difficulty is just right” Participant Twelve stated “I think the yoga is very good. And I think basically she keeps us in beginning yoga. We go through all of the fundamentals; the forward bends, the back bends, the twisting, triangles. We go through the whole thing. For me, it is where I always go because I know I can start and I will be okay, I will be safe, I won't get hurt.”

Question 7: A: Describe ways in which the SAIL class has impacted your life?

When asked to describe ways in which they felt SAIL had impacted their lives the most common response was noticing improvements in physical function. Along with improvements in physical function people reported increases in their engagement with life, an opportunity to grow spiritually, and one person reported cognitive improvements. All participants who were asked about the effects of the SAIL class reported physical improvements of some kind ranging from

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decreased pain to improved balance and stamina. When asked about ways in which the SAIL class has impacted his life Participant Ten stated, "I have accomplished a lot. I wasn't very good at [balancing or stretching] until I started. I was so/so but now I am better." Participant Nine reported "The most impact [SAIL] has had on my life is that I am able to do more. I can reach further. More often I can do my housework. I can reach the floor. I can reach up high. It's very valuable. When you cannot do things like that it limits your life. When I first started [the instructor] wanted us to back up and I told her, "oh you can't back up ever in the market". You have to turn around and look. And she insisted we do it. And now I realize that the ability to back up is really important. I shouldn't ever say to myself, I don't back up. Or I don't lift. Or I don't reach. Yes I do, and because of [the instructor] I do it safely."

This improvement in physical function was reported to lead to the prevention of injury. Participant Seven reported "There is one [exercise] that she calls getting off the bus. And [it got me] thinking about when you are turning to the back and you are having to move your leg to the side and getting up. [This has] improved my balance. And I know that [the instructor] has a couple of movements that are related to falling forward or falling backward. And the falling forward I have actually used a couple of times for a trip to put the leg out there and balance. So that has been helpful because I see friends of mine that have had falls and sometimes they can be very devastating."

Engagement with life was also commonly reported by participants. People found that by participating in the SAIL class they were more engaged in their lives either through improved abilities to work, having a daily routine, or through building connections with others in the class. For example, Participant Ten reported, "I am feeling good about myself possibly. I have accomplished [something] that day so I feel good and I feel better [because I have] a daily routine. When asked about the development of social relationships due to the SAIL class Participant One stated "One of the participants and I would go to the Sticky Bun place after the class. It was very enjoyable to make friends." and Participant Three stated "[SAIL] is also a social interaction opportunity for me that I appreciate". Participant Three reported the SAIL class decreases his isolation by stating, "Well certainly it has helped with the vestibular issue but also, I am a writer and so I mostly work alone and so some days where I do not have any outside meetings that could be my only social contact. So I appreciate that. I don't intend to be a hermit."

When discussing spirituality about half of the participants reported feeling the SAIL class had been a way to improve spiritually. In response to being asked about spirituality Participant One responded by saying, "the more I am into my body the more I am in my life. I always say if I am walking and talking I am okay." Participant Four stated, "[The spirit] is the same. I am more in tune with my body and my spirit because I am working on my body my spirit is also getting worked on. Meditation was coded under spirituality and Participant Seven stated "[SAIL] could be meditative, like a moving meditation. And I think the breathing, controlling your breathing; the in and out breathing you know as you are exercising, can be like a meditation focusing on your center." Mood was also coded under spirituality and Participant Four stated, "But I think exercising keeps me in a good mood. I prefer to be in a good mood all of the time. It is very rare that I get upset about anything."

Even though cognitive function and intellectual development were probed for during the semi structured interviews, participants did not have much to report on the topic. Only one participant reported on cognitive improvements as a result of the SAIL class. Participant One stated, "I believe that the more you do exercise-wise the more you are able to do [mentally] Even if I just walk more in between classes that I have an improvement in my cognizance."

A: Describe ways in which the yoga class has impacted your life?

When asked to describe ways in which the yoga class had impacted their lives physical benefit was the most commonly reported response followed by engagement with life, spirituality and cultural development. When discussing the physical benefits experienced from the yoga class participants expressed feelings of physical improvement, general well being, and decreased stress. Physical benefits which were reported in this section of the interview were improved strength and balance, and general health improvements. For example, Participant Thirteen

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reported receiving positive feedback from her doctor after starting the yoga class, "After I talked to the doctor the doctor says the class helped me a lot and he told me it improved my health in general. After the class I feels better, I feel healthy". Participant Ten reported, "I have noticed improvement in my strength and balancing. The physical benefits of yoga were also reported to lead to the recovery and prevention of disease. Participant Five stated "I feel I have better health, I don't seem to have arthritis like most people my age do. Also, I slipped and fell on ice and just getting back into yoga helped repair whatever damage had been done. I had eye surgery one time and I did not go for about a month and boy I noticed the difference. I started getting achy and lethargic and I thought, "gosh, I have to get exercise". Similarly, Participant Four stated, "My knee does not bother me so much. This why I decided to try this class."

Decreased stress was reported as being a physical, cognitive, and spiritual benefit by participants who discussed yoga as a stress reliever. Participant Eight reported yoga has helped her in times of grief stating, "[Yoga helps] when I am grieving, I can let go some. Like let go of the tension". When discussing stress Participant Fourteen stated, "I think Yoga helps with my situation as I try to clear my mind." and similarly Participant Five stated, "Emotionally I feel like I am calmer and if I have problems, that little thing we do at the end, I kind of sort things out in my mind. It is like I am going to be a better person now. It is just stuff you go through and it is like meditation I think and I like that.

When asked to describe ways in which the yoga class had benefited their engagement with life participant reported the class got them out of the house, helped them meet new people and sustain relationships. Participant Fourteen stated, "Yoga is the reason we go out of our homes. We talk to people, meet people. This [class] helps a lot" followed up by Participant Fifteen stating, "We are friends because we have been [in yoga] seven or six years.

Participants reported the yoga class gives them a sense of belonging to a community. Participant Eleven stated, "What it has done for me is, because I am the type of personality in that I am and a lot of the veterans like me and I talk to them and they are okay when we are out there on the street. We will sit and giggle about something we do in yoga or SAIL or something; just because it is a common ground that we can exchange and share camaraderie. It allows me to feel more functional and helpful". Participant Three "When I see other people walking around town with Yoga mats I have a better understanding why they are doing that."

When asked to discuss how the yoga class has affected their spiritual growth participants who responded to this question stated yoga reported feelings of mindfulness, the ability to emotionally surrender, and the use of medication as ways yoga has improved them spiritually. Participant Eleven stated, "Yoga has helped me to refine the breath. The strength in the breath, the quietness. I like to come to her yoga class, surrender and let her lead. And I don't have to do anything but follow. I can close my eyes almost completely and just follow. I like the opportunity to surrender". Similarly, Participant Five stated, "I have noticed changes in my spirituality, that is this whole thing about meditating. I get home and I have the meditation. I think I am going to do this at home too but I have not so far but I intend to. [the instructor] gave me a CD too, which I thought was very sweet". Participant Twelve saw the yoga class as an opportunity for spiritual "tuning" stating "through the music, even if I don't know the exercise the yoga class sometimes seems like tuning, like tuning my mind".

When asked to discuss if yoga had affected their understanding of other cultures a few participants reported enjoying learning from other participants who had different cultural backgrounds from their own. For example, Participant Five discussed that the yoga class has provided her with the opportunity to build a friendship with another participant who practices a different religion than she does. She stated "He took me to the Christian Science Reading Room. I went in with him because I like him as a friend. He has these computers there and I read some of the books. It was kind of an experience, I never thought the Christian Science Reading Room was anything but being a building.

Similarly to the SAIL class participants the yoga class participants did not have much to comment on concerning cognitive or intellectual benefit. Some participants did say yoga decreased stress which lead to a clearer mindset but none spoke specifically about cognitive

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function. Participant Eleven did state, "Yoga helps deliberateness in effort, nutrition, everything, it provides a deliberate awareness."

Question 8: A: What do you like best about the SAIL class?

When asked what they liked best about the SAIL class participants stated the following answers.

Participant 1

- Well I like that it is the morning because it isn't too early, it is, you know, 9:30."
- It is a nice amount of time.
- I like the fact that it is in a place where there is a lot of people. I like being around the people in the senior center and I have belonged here since I was 55 and I am 73 now.

Participant 3

- "That is challenging my vestibular system, my balance system and I am seeing slight improvement. At the very least, I do not see continued degradation, deterioration of my balance system and I am even seeing slight improvement. So for me that is the biggest benefit.

Participant 4

- "That is free and it is just up the street, maybe a block away from my apartment. no excuses! I don't think about it anymore, I just go. If I think about it I will talk myself out of going. "It is cold outside!"

Participant 6

- The regularity I think is a good thing. The same exercises and that the class is three times a week and it has been going on for so long.
- And the challenge. Because like I said, it looks simple but it actually is not.

Participant 8

- [The instructor's] instructions. What she has us do. Like I said, it changed my life. I can pull my cart home and before I was having trouble. I pulled my back out doing that before the class.

Participant 9

- The exercise itself
- The friendly people

Participant 10

- I like the time of day.
- I like the music.
- I like the instructor.
- I really like the members of the class.

B: What do you like best about the Yoga class?

When asked about what they liked best about the yoga class participants reported the following answers

Participant 2

- I like the time of day.
- I think three times a week is about right.

Participant 3:

- You know, as we get older and I think it is true of any age but as we get older, having joint mobility, being able to stretch muscles, that is really healthy for the body overall and [yoga] is helping me in that way. I am more flexible.

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Participant 5

- Probably the meditation. I also like the downward facing dog. You look up and then you do downward dog and then you do the plank. Those ARE hard. I kind of like them because they are helping my arm muscles. Maybe some day I will be able to do pushups.

Participant 7

- The teacher and the people.

Participant 9

- I feel like I accomplish something during the day exercising.
- I am a little bit better coordinated

Participant 11

- it is a privilege to be in the dining room and sit at the table with the name yoga. [other members] never forget to acknowledge our presence. Even

Participant 12:

- It is diverse. Even men are in the class
- I like the social, even if we don't talk I mean I like being there. I like being in the room with my kind of people.
- it is a good example for others.
- And it is free.

Participant 13

- She is very good, very nice teacher.
- She is willing to help students.
- She is on time about the class.

Participant 14

- [the instructor] takes care of my concerns. She is concerned about her students. When they come over, she knows them and she tries. She is concerned with every single student.

Participant 15

- I like everything about the class.
- [The instructor] is very friendly. I think she tries the best she can.
- My body is stronger.

Question 9: A: What would you like to see change in the SAIL class?

When asked about what changes they would like to see participants had a variety of suggestions but most were suggestions on the classroom space. Other suggestions included increasing recruitment and more difficult exercises. Many of the participants did not have suggestions. They reported being satisfied with the class or not having any suggestions at the time.

Suggestions for improving the space included a bigger space, installing a water fountain, new paint on the wall, changing the music, and educational posters added to the wall. Participant 4 stated "Today it was a little crowded because more people came. Usually there is just not that many people so yes, it is big enough. But if they can give us a bigger room that would be good too, more people could come. Participant Ten stated, "I would like to see the pain on the wall be a different color. I am grateful for the space, all of it, but I think the color could enhance what we are trying to do. In response to Participant Ten's comment on pain Participant Eleven stated "I would prefer to have them demonstrate some of the stretches that they do the walls. Posters to influence the programs that we are doing".

One suggestion concerning the difficulty level of the class was made by Participant One who stated, "maybe it could be a little bit overall more difficult. I do not want to do jumping jacks but maybe just a little bit more difficult. Once you learn how to do [the exercises] you do not have to think about doing them. Participant Three made observations and suggestions concerning

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participation stating “I would like to see expansion in participation, I mean, just from a social point of view and moral point of view, over at the [PMSC] there are others, mainly guys, that are not in good health and here is a free class right in front of them and they would rather sit there.”

What would you like to see change in the yoga class?

When asked about what they would like to see changed the most common suggestions participants shared were changes to the classroom. Participant 2 stated he would like a larger space and the class arranged in a different way; “A larger exercise space. More people could be there but also because of my size I need more space and so I always feel like I am kind of scrunched in a little bit. in the ideal world, I would like almost a half moon [shaped class]. I think that would be very comfortable for everybody.” Participant Fourteen and Participant Fifteen also stated “the room is too small” and “we need a bigger room” respectively. Another suggestion for the room that participants made was temperature control it was noted that the room was too hot in the summer and too cold in the winter.

The floor was also a common concern. Since the interviews took place the PMSC has installed new floors. The responses in the interview were to the concrete subfloor. In response to the floor Participant Two stated “Oh boy. That is some of the hardest concrete I have ever been on” and similarly Participant Seven stated, “The space could be better by not having a concrete floor.” Participant Seven stated “So, something I have noticed. In the summer it was really hot. The fans did not help much” and Participant Fifteen stated “In the winter the room is too cold”.

The length and frequency of the class was also mentioned. Though not a common suggestion, Participant Five suggested making the classes longer and Participant Seven suggested adding yoga classes to Tuesdays and Wednesdays or having more classes later in the day.